

# CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY?

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HEARING  
BEFORE THE  
SUBCOMMITTEE ON  
AVIATION  
OF THE  
COMMITTEE ON  
TRANSPORTATION AND  
INFRASTRUCTURE  
HOUSE OF REPRESENTATIVES  
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## CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY?

Thursday, July 14, 2005

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON AVIATION, COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, WASHINGTON, D.C.

The subcommittee met, pursuant to call, at 10:03 a.m., in Room 2167, Rayburn House Office Building, Hon. John L. Mica [chairman of the subcommittee] Presiding.

Mr. MICA. Good morning. I would like to welcome you to the House Aviation Subcommittee hearing this morning. The topic of today's hearing is Cell Phones on Aircraft: Nuisance Or Necessity? And today's order of business in our hearing will be, first of all, we will have opening statements from members, and we have two panels of witnesses. I am also informed that I think we are going to have votes in about 20 minutes, so hopefully we can get through opening statements. We will get to our first panel of witnesses and move the hearing along. I have an opening statement I will begin with. And, again welcome, everyone.

Over the past few years, unfortunately, the flying public has had to contend with an increasing amount of noise on aircraft from their seat mates who travel with an array of portable electronic devices—and I think we have got a bunch of them set to go off here. We have got my Blackberry. We have, this is an iPod, I guess the younger generation is familiar with this. And then you get to hear these on your flight, which is a Gameboy and then a cell phone going off all at this same time.

So these are some of the noises that the average passenger has to contend with. So I think it is kind of fitting today that the Aviation Subcommittee will consider some of the many social air safety, national security, law enforcement, and even finally I guess one more noise pollution issues that have been raised by the Federal Communications Commission's proposed rule that effectively repeals its longstanding ban on the use of cell phones and other wireless communications devices on board aircraft.

Since 1991, the FCC regulations have prohibited the use of certain cellular phones and wireless communication devices on aircraft out of concern that such devices interfere with ground-based cellular networks. In December, the FCC proposed a rule that would effectively lift its ban, and citing new technologies that would prevent cell phones and other wireless communications on board aircraft from interfering with ground-based cellular networks, which is the FCC's primary concern.

The Federal Aviation Administration regulations also prohibit the use of cellular phones and portable electronic devices with radio transmitters because of the possibility that such devices may interfere with the critical aircraft navigations avionics and communication equipment. Due to this overlapping jurisdiction, any change to the existing ban on the use of cell phone or other wireless communications devices on board aircraft would require approval of both the FAA and the FCC.

While the FAA has not followed the FCC's lead in proposing to end its own aircraft cell ban, the FAA recently certified on a trial basis the use of a small aircraft mounted transmitter which is called a pico cell, that would allow a certain number of passengers to use their personal cell phones, also their Blackberry hand-helds and other personal digital assistance, I guess they are called PDAs, that again with this mechanism they believe it wouldn't interfere with avionics. I hope to learn more about this promising new technology from some of our witnesses today.

In addition to the pico cell technology, the FAA recently certified a high-speed wireless or—well, Internet or Wi-Fi system which has been developed by United Airlines and Verizon. In addition to allowing passengers to send and receive e-mails and surf the Web, this technology is capable of Internet-based voice communications commonly known as voice over Internet protocol, or VOIP. That would allow passengers to make and receive telephone calls with very special equipment without again generating interference with avionics or ground-based cellular networks.

Over some 7,800 interested parties, including airline passengers, business executives, law enforcement officials, cell phone providers, pilots, and flight attendants, and others submitted comments and reply responses to the FCC's proposed rule. These comments raised a number of very important law enforcement, national security, air safety, and some basic social issues that our witnesses will address this morning.

I might say that the annoyance issue which I alluded to earlier is by far the most common concern raised by both the flying public when we consider lifting an aircraft cell phone ban.

Flying has become increasingly inconvenient and stressful for a number of reasons, including the rising passenger loads, fear of terrorism, long lines, and often intrusive and irrational screening procedures at the Transportation Security Administration checkpoints, flight delays, last-minute cancellations, and lost baggage, and generally, unfortunately, sometimes increasingly poor customer service by—I will edit this and say—some of the airlines.

Understandably, many passengers are protective of the solace they feel when they finally reached their undersized seats and crack open a skimpy bag of—well, I guess U.S. Airhas given up pretzels and some have given up peanuts. But whatever they get. The last thing most air passengers want is to be forced to listen to their neighbor chat on the cell phone about their ailments, their dating problems, the latest reality TV show, or an up-to-the-minute estimate of time of arrivals for the duration of the flight.

Flight attendants also are very concerned that proliferation of the mundane cell phone chatter within the limited confines of an aircraft will inevitably lead to not only again passenger discomfort



but possibly incidents of air rage, which, unfortunately, the flight attendants would be forced to police.

The Department of Justice and the Department of Homeland Security have raised several national security and law enforcement concerns in their joint comments to the FCC. DOJ and DHS are concerned that criminals or terrorists could use cell phones, PDAs, other Wi-Fi connected devices to coordinate an attack or, unfortunately, as we have seen in some cases where they detonate remote controlled improvised explosive devices on an aircraft as they did in the Madrid rail bombing last year and as we learn more about again some of the incidents relating to the London bombings last week.

The agencies are also seeking the ability to conduct court-ordered electronic surveillance of suspicious passengers' voice and data transmission, which, in itself, also raises a number of concerns.

At the same time, we have to remember that many of the calls from passengers of the four aircraft that were hijacked on September 11th were made with cell phones and provided invaluable information to authorities and also to loved ones. The cameras that are built into some of these cell phones as we have also seen most recently can provide key evidence for law enforcement investigators. In piecing together the details of the hijacking of the United Flight 93, the 9/11 Commission relied mainly on the record of FBI interviews with people who received cell phone calls from heroic passengers who mounted an assault on the terrorist hijackers and whose objective as we know was to crash the 757 into either the Capitol or the White House. It is also important to keep in mind that many of the passengers on the four aircraft hijacked on September 11th were able to say their final goodbyes to loved ones on their personal cell phones.

Moreover, it is important to note that PDAs or other wireless communication devices would enhance the ability of our Federal air marshals to share intelligence on suspicious passengers or respond to actual terrorist attacks. Since 2002, Congress has appropriated millions of dollars to the Department of Homeland Security to research and develop air-to-ground communications technologies that would also allow these Federal air marshals to use wireless communications devices without causing interference with ground-based cellular networks or airplane avionics.

If the FCC and the FAA were to approve the use of cell phones and other wireless communication devices on aircraft, the ultimate decision to allow such devices in flight would fall to the airlines, which, unfortunately, are divided on the issue. And regrettably today ATA, the Air Transport Association, has declined to participate in this hearing. To address the annoyance issues, some of the airlines and cell phone providers have also proposed a tap but not talk policy that would allow airline passengers to use their cell phones, their Blackberries, and PDAs only to send and receive e-mail messages and access the Internet. That is another option that we will probably hear about.

So I look forward to hearing the views of our witnesses, hearing from the panelists, the two panels that we have assembled. And with that beep of one of these electronic devices, I will recognize Mr. Costello.

Mr. COSTELLO. Mr. Chairman, thank you. Mr. Chairman, I think I am going to have to call my office and cancel the phone call that I asked them to give to me. And I think Mr. DeFazio is probably going to have his phone ring next. So you have trumped us on that.

Let me just say that I think you have accurately described the purpose of the hearing and some of the issues involved both pros and cons of lifting the ban. I would just say that I do have an opening statement, I will submit it for the record.

I have very serious concerns about lifting the ban, both from the standpoint of safety and social consequences. I think that we should listen very closely to not only the FAA, but also the Department of Homeland Security and the Department of Justice. There are many issues that they have raised concerning the security issues that we should pay particular attention to. And let me just say that I look forward to hearing the testimony of the witnesses, and hopefully I will be going to the floor very shortly; hopefully I will be back at some point because I do have some questions.

Mr. MICA. I thank the gentleman.

Mr. Duncan.

Mr. DUNCAN. Thank you very much, Mr. Chairman. And thank you for calling this hearing. I was one of the more than 7,000 who sent a letter or comment to the Federal Communications Commission in very, very strong opposition to the lifting of this cell phone ban. And I can tell you, I come down very strongly on the nuisance side of this equation. I remember reading a couple of years ago that Amtrak tried out a cell phone free car on its Metroliner train from New York City, and so many people rushed to that car that they immediately had to add on another cell phone free car. Around that same time, I read about a restaurant in New York City that banned cell phones from one of its dining rooms, and the next day it had to double that by adding on a second dining room because so many people wanted to participate.

Among the comments to the FCC, passenger Richard Olson wrote the Commission: A fellow passenger's signal was breaking up, so his remedy was to talk loudly. The flight attendant had to ask him to quit using the phone. On the ground, we can walk away from these rude, inconsiderate jerks. In there, we are trapped.

The Boston Globe wrote about a conversation that Gail James of Shelton, Washington found on one flight. She said, quote: I was seated next to a very loud man who was explaining his next porn movie on his cell phone. Everyone on the plane was subjected to his explicit blabbering. Should cell use during flight be allowed, we had all better be prepared for a whole lot of air rage going on.

A CNN/USA Today Gallup poll found that 68 percent were opposed to lifting this ban; only 29 percent in favor.

Now, cell phone technology is, in many ways, a wonderful thing. It can be used, as we all know, to help in emergencies, to let someone know that they are going to be late for an appointment, to call for directions when you are lost. But I also wish that we had much more cell phone courtesy. I think most people do not realize that they talk much more loudly in general on a cell phone than they do in a private conversation. And almost everyone has a cell phone today. A former Knoxville city councilman told me at the first of this past school year that three young girls were in the office at

Fulton High School in Knoxville saying they could not pay a \$50 activities fee, but all three of the girls had cell phones on which they were probably paying \$50 a month cell phone bills. Today, cell phones are heard going off, I have heard them go off at funerals, weddings, at movie theaters, restaurants, congressional hearings. One was even answered by a reporter asking President Bush a question, and apparently it caused President Bush to get very upset as it should have. Gene Sorenson wrote recently in the Washington Post, quote: I don't mean to interrupt your phone conversation, but I thought you should know that I can hear you. I would close the door, but I can't seem to find one on the sidewalk, the path at Great Falls, in line at Hecht's, or at table 4 by the window. It is not like I'm eavesdropping. As titillating as it sounds, I am not drawn into your conversation about yoga class, tonight's dinner, or Fluffy's oozing skin rash.

Although cell phones have been around for a while, we still associate one with privacy. Put one to your ear, and you will think you are in your kitchen, office, or, what was called a phone booth. But take a moment to look around. You are in public.

On June 21, Robert McMillan wrote in The Washington Post about some of the comments to the FCC, and he quoted Steven Brown who described the perfect trajectory of what he called hell: Just imagine that ring conversation being mere inches from your head and on both sides of you while occupying the middle seat for a five-hour flight from L.A. to New York. Hideous.

In addition, I know there are security concerns and some concerns regarding possibly the effect on aircraft avionics. But I hope that we do not lift this ban, and I hope that it becomes very clear in this hearing that there is a great deal of opposition to this proposed change. And I thank you very much for calling this hearing.

Mr. MICA. I thank the gentleman. Mr. DeFazio.

Mr. DEFAZIO. Thank you, Mr. Chairman. Mr. Chairman, this is not an issue of first impression for this committee. I remember a number of years ago we had a hearing on cell phones. We had a professor from Embry-Riddle who said—sorry, Mr. Chairman.

Yeah. Yeah. No, we are in this thing. Yeah. No, it will be. Yeah. Yeah. Okay. Yeah. Okay. Yeah. Sorry. I'm sorry, Mr. Chairman. Okay. Bye, yeah. Yeah. All right. See you. Bye.

Mr. MICA. You are just lucky you didn't do that with Mr. Young.

Mr. DEFAZIO. I know. I would have been in deep trouble. We are going to put Chairman Young in charge of this issue.

But that is the point. I mean, and he told us and at the time I was suspicious that we were being held captive by the industry to these air phones, you know, and their extortionate charges. But he said, convincingly, that there was a possibility, particularly in a fly-by-wire aircraft, small but possible, of a damaged cell phone or other transmitting device causing a problem. Now they are trying to deal with that with this pico technology, I guess. But I am not sure that totally addresses his problem. I think the committee will need to hear from him again and ask him whether this addresses some of these potential safety concerns. There are enough problems with cell phones and the potential with cell phones on planes. I don't think anybody wants to take a chance a plane might go down

because some idiot is having a totally trivial conversation. So that is one point.

I remember when smoking was allowed on planes, and the numbers sounded very similar to what was earlier cited here in the polling 68% to 29%. And yet—and in fact it was even a little higher against smoking, I believe. But everybody was subjected to the smoke. I remember when people would sit near the smoking section and they complained to the flight attendants, and the flight attendants would call the pilot, and finally the pilot a lot of times would just declare the plane was going to be nonsmoking, and everybody on the plane including a lot of the people in the smoking section would cheer. But the airlines would tell me, oh, we can't do anything about that. It is about competition. And, by God, you know, we will lose passengers if we ban smoking. So they would never go there.

I worry about the same crack in the door here. One irresponsible airline might decide to allow a free-fire zone for cell phones, and then the others would say, oh, my God, it is a competitive thing; we might lose passengers. I would argue the opposite as the chairman and former chairman documented. You might well drive people to the other airlines if you allow the cell phone usage. I mean, I fly transcontinental almost every week. I just can't imagine six hours and some odd minutes sitting next to somebody hearing about a lot of things I really don't want to hear about. You know, I think you are going to have problems with air rage, and then this whole issue of sort of the foot in the door.

Certainly transmitting data or text, that is, if we have addressed fully all of the potential safety concerns and there isn't even a one in a million chance the plane is going to go down because of a damaged unit or lose control, then we might go in that direction. But I would hope in echoing the earlier comments that we will not allow voice, because I worry that, if it is allowed, that some of the weak knees in the airline industry will look at it as an edge to try and get a foot up on their competitor. Thank you, Mr. Chairman.

Mr. MICA. I thank the gentleman. Mr. Kuhl.

Mr. KUHLE. I pass.

Mr. MICA. Thank you. Ms. Norton.

Ms. NORTON. Thank you very much for this hearing, Mr. Chairman. The nuisance and the value of cell phones is of course legendary by this time, everything from the ring to conversation in decibels that are calculated to go above what is happening in the room so that the person on the other end can hear you and you can annoy everybody else.

We have got new technology, we need a new code of conduct, and I think this hearing helps us to move in that direction.

I am also concerned, frankly, about with what this new technology can do in ways that were never imagined before like detonate explosives. I think it is worth considering that this may no longer simply be a matter of nuisance but could go far beyond that at a period when we are still in the post 9/11 era. I note that Mr. Chertoff announced yesterday that the 30-minute rule, no matter what your own emergency, you have got to stay in your seat only if you happen to be taking off or coming in to the District of Columbia for 30 minutes.

Mr. Chairman, this was a perfect example of how we get stuck no matter what this committee does. And this committee had done its work. We had hardened the doors, billions of dollars of on-the-ground security where you have got to do it or it simply is not going to get done, even guns, a very controversial notion of some pilots able to have guns has taken us more than 4 years to say, oh, by the way, if you have to go to the john, you can go when you are coming in or going out of Washington. I mean, what would have happened, of course, is if somebody got up and forgot, the whole plane was going to get panicked because, oh, you rose when you weren't supposed to rise and people were threatened that the whole plane would have to turn around. Invariably I can see that.

But, Mr. Chairman, I do remind our witnesses that this committee felt even more strongly about general aviation, and there was an announcement that within 90 days from, I don't know, it was about a month or perhaps six weeks ago, that some general aviation would be able to come into the Nation's capitol. That is just like the 30-minute rule, only applicable here. Here, the charter matter, the general aviation matter only applicable here, sending out the clear message: We don't know how to protect our capitol. There was some rumbling that maybe something was happening even to that announcement of a change. I will want to hear and I am sure the committee will want to hear about that.

If I may say so, the cumbersome, nonsensical restrictions on general aviation as it came into here were almost laughable. It reminds you of the 30-minute rule. So I will be very interested—I have three other committee hearings going on at the same time—as to your progress on general aviation opening in the Nation's capital more than four years after 9/11. And I thank you, Mr. Chairman.

Mr. MICA. I thank the gentelady. And I thank all the members for their work on the 30-minute rule and also for reopening Reagan National to civil and general aviation again. It does take a long time to get some of these long overdue changes.

Are there any other opening statements?

Ms. MILLENDER-McDONALD. Mr. Chairman.

Mr. MICA. Ms. Millender-McDonald.

Ms. MILLENDER-McDONALD. Thank you so much. I would like to just go on record saying that I think it is also a nuisance; that when I travel 12 hours a week from here to California, I appreciate the time away from my cell phone. And of course Gameboys are a different story. But I really do think that all of these devices should be turned off during flight time. I think it is not only a safety feature, I think it is a security feature. And with the Gallup polls showing that 68 percent of Americans are opposed to cell phone use on aircrafts, I think we should adhere to that. I look forward to the witnesses. I do have a statement to submit for the record, and I ask unanimous consent to do so. Thank you, Mr. Chairman.

Mr. MICA. Without objection, your entire statement will be made part of the record.

And if there are no further opening statements, we will turn to our first panel. We do expect some votes here shortly, but we might be able to get through a couple of the witnesses.

We have Mr. Nicholas Sabatini who is the associate administrator for aviation safety of FAA. Mr. Julius Knapp, deputy chief, office of engineering and technology with the Federal Communications Commission. Ms. Laura Parsky, and she is a deputy assistant Attorney General, criminal division, of the Department of Justice. And accompanied by Patrick Kearney, and he is senior policy advisor, U.S. Department of Homeland Security. And, finally, David Watrous, president of RTCA.

**STATEMENTS OF NICHOLAS A. SABATINI, ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY, FAA; JULIUS KNAPP, DEPUTY CHIEF, OFFICE OF ENGINEERING AND TECHNOLOGY, FEDERAL COMMUNICATIONS COMMISSION; LAURA PARSKY, DEPUTY ASSISTANT ATTORNEY GENERAL, CRIMINAL DIVISION, DEPARTMENT OF JUSTICE, ACCOMPANIED BY PATRICK KEARNEY, SENIOR POLICY ADVISOR, U.S. DEPARTMENT OF HOMELAND SECURITY; AND DAVID WATROUS, PRESIDENT, RTCA, INC.**

Mr. MICA. Welcome.

The procedure will be we allow basically five minutes for presentation. If you have a lengthy statement or additional information you would like to have made part of the record, please feel free to request that through the Chair.

Welcome back, Mr. Sabatini, with FAA. And you are recognized.

Mr. SABATINI. Good morning, Mr. Chairman, and thank you, Mr. Costello, and Members of the Subcommittee.

It is a pleasure to review FAA policy and rules regarding the use of portable electronic devices, or PEDs, on aircraft and the possible impact of a proposed rulemaking by the FCC to relax its ban on the use of certain cell phones on aircraft. Above all, I am here to represent the safety of the flying public and flight crews.

Let me be clear. Regardless of the final outcome of the FCC's proposed rulemaking, the FAA's safety regulations regarding PEDs on board aircraft will remain in place. FAA has the authority and the expertise to assure the highest standards of safety.

To prevent potential interference with aircraft communication and navigation equipment, the FAA has regulations prohibiting use of PEDs with some limited, specified exceptions. Our regulations do allow limited use of PEDs when the aircraft's operator has shown that the use will not interfere with the aircraft's navigation or communications systems. This general exception sounds deceptively simple. I assure you, it is not. Unlike older aircraft, with their cable and pulley flight control systems, today's airliners are modern "fly-by-wire" aircraft. These modern aircraft depend on clear electronic signals to translate pilot control input to the aircraft control surfaces.

The FAA will continue to work with other agencies, such as the FCC, and industry consensus groups, such as RTCA, to stay out front on this issue. We want to ensure technology developed to facilitate cell phone and other types of communication from aircraft do not interfere with on-board systems or with communication and navigation.

To understand the risks that PEDs can pose for aircraft, it is important to understand electromagnetic interference. All electronic devices emit electromagnetic waves.

PEDs fall into two groups, intentional and unintentional transmitters. Intentional transmitters emit to interface with other devices or systems. Examples are cell phones, two-way pagers, and wireless modems. Unintentional transmitters are all other electronic devices such as games, laptop computers, and Personal Data Assistants. Unintentional transmitters emit electromagnetic waves whenever they operate.

Here is the issue. The aircraft's onboard control, communication, and navigation systems can be affected by intentional and unintentional PED emissions. The chance of this occurring is greater with intentional transmitters such as cell phones. To prevent possible interference during the critical phase of flight, that is takeoff and landing, we recommend air carriers prohibit the operation of any PED during these phases of flight.

Under FCC rules, an air carrier may permit passengers to use their cell phones when an aircraft is on the ground. Passengers must turn off their phones once the aircraft has left the gate.

With advances in cell phone technology, FCC now believes its rule banning 800 megahertz cell phone use in flight may be lifted provided certain issues are mitigated by onboard equipment installation, such as a "pico cell" installed on the aircraft that acts as an antenna for onboard callers. The "pico cell", or similar equipment, would limit the frequency output of cell phones onboard the aircraft and ensure cell phone transmissions would not interfere with ground networks, which would address FCC's concerns.

FAA is not changing its rules. If an air carrier elects to take advantage of the FCC's proposed rule and allow cell phone usage during flight, the carrier must determine which phone models will work on its onboard system, and that the system will not interfere with the aircraft's navigation or communications systems. The air carrier must also determine whether the system meets FCC requirements. Thus, in the context of the proposed FCC rule, an air carrier will have to obtain FAA certification of the pico cell equipment as part of the aircraft. This is consistent with current FAA certification processes. Providing passengers with new communication technology raises what FCC Commissioner Copps refers to as the "annoying seat mate issue." This is largely a social issue, yet there are safety implications. We are concerned that, should in-flight cell phone use be permitted, flight attendants could be distracted from their critical safety responsibilities if they are called upon to deal with irate passengers.

Mr. Chairman, FAA will continue to assure safety by enforcing and maintaining its regulatory oversight on the use of all PED onboard aircraft. This concludes my testimony. And I am happy to answer any questions that you and the other Members of the Subcommittee may have.

Mr. MICA. Thank you. And we will hold questions. We will try to get Julius Knapp in before we go to votes. So welcome, sir. You are with the Federal Communications Commission, and you are recognized.

Mr. KNAPP. Good morning, Chairman Mica, Ranking Member Costello, and members of the subcommittee. Thank you for this opportunity to appear before you today on behalf of the FCC to discuss the regulatory structure and engineering parameters related to cellular phones on aircraft.

The FCC is an independent U.S. Government agency directly responsible to Congress pursuant to the Communications Act of 1934 as amended. The statute charges the Commission with the regulation of interstate and international communications by radio, television, wire, satellite, and cable. Within the Commission, the Office of Engineering and Technology, or OET, is responsible for technical aspects involved in managing the use of the Nation's airwaves or radio spectrum. In carrying out this responsibility, OET works in collaboration with other bureaus and offices within the Commission to evaluate the potential for radio interference among various radio services and equipment. The Commission's rules at Section 22.925 prohibit the use of cellular phones in the 800 megahertz band on aircraft except for aircraft on the ground. The Commission codified these rules in 1991 after concluding that the interference caused by in-flight use would be disruptive across a wide area and affect large numbers of users on the ground.

Although the Commission prohibits the use of cell phones while airborne, its rules provide 4 megahertz of spectrum in a separate frequency band for use by the Air-Ground Radiotelephone Service. The Commission recently provided for phase-out of the existing Air-Ground Radiotelephone Service and restructuring of the band to allow the provision of broadband services on aircraft by one or two new licensees. In addition, the Commission has granted a waiver to AirCell, Inc., that permits AirCell to offer air-ground service in spectrum allocated to the cellular radio service using specialized plane-mounted antennas and handsets which are employed primarily on private aircraft.

The Commission's rules do not address potential interference to aircraft communications and avionics systems including all radio and electronic devices. The FCC defers to the FAA to regulate devices and activities that might interfere with the safe operation of the aircraft as you have already heard.

On December 15, 2004, the Commission adopted a notice of proposed rulemaking to consider whether new technological developments warrant changes to the current rule prohibiting airborne usage of cellular handsets. The Commission closed its initial comment period on May 26, and reply comments are due on August 11.

In this proceeding, the Commission has received comments from over 7,000 individuals and more detailed substantive comments from about 30 parties which we are in the process of reviewing. The NPRM invited comment on whether technological advances that have occurred since the original adoption of the rules could permit operation of wireless handsets and devices including those used for broadband applications on aircraft without causing interference to terrestrial radio services. The notice also invited comment on several potential technical approaches that could permit such operation.



In addition, the Commission requested comments on whether or not any restrictions adopted should apply to handsets and devices operating under other parts of the Commission's rules.

As I mentioned, the Commission received a large number of comments. Many individuals expressed concern that allowing the use of cell phones on airplanes would be a nuisance to other passengers. A number of commenters that addressed the substantive interference issues argued generally that, under certain conditions, the use of cell phones on aircraft would not pose undue interference to terrestrial radio services.

In the NPRM, the Commission stated that any steps the Commission ultimately may take will be subject to the rules and policies of the FAA and aircraft operators with respect to the use of personal electronic devices including cell phones. Even if the Commission were to adopt rules pertaining to the use of wireless equipment on aircraft, airborne use of such equipment will not be permitted unless it is in accordance with the FAA rules and requirements. Moreover, the Commission, the FAA, or the airlines could, in modifying and prohibitions against the use of cell phones on aircraft distinguish between voice and data communications in order to minimize nuisance to other passengers.

The Commission also recognizes that law enforcement has filed comments in response to the notice indicating that use of cell phones and other radio devices onboard aircraft could pose concerns relative to the Communications Assistance to Law Enforcement Act and to Homeland Security. The Commission will carefully consider these important concerns as the proceeding continues.

The Commission appreciates the interest of this subcommittee in the current rulemaking. The Commission's staff will study this matter in light of the comments that we have received. And this concludes my testimony, and I am pleased to answer any questions members of the committee may have. Thank you.

Mr. MICA. Thank you, Mr. Knapp.

What we are going to do for the other three panelists is we are going to recess for approximately 20 minutes, maybe about 5 after. Take a quick break, and then we will get back to Ms. Parsky and the other witnesses. So we will stand in recess while we have these votes.

[recess.]

Mr. MICA. I would like to call the subcommittee back to order.

I would like to apologize for the delay. We were hearing from our first panel of witnesses. I will recognize now Laura Parsky, Deputy Assistant Attorney General for the Criminal Division of the U.S. Department of Justice.

Welcome, and you are recognized.

Ms. PARSKY. Thank you.

Good morning, Mr. Chairman, members of the subcommittee. I appreciate the opportunity to join you today to discuss the use of cell phones on aircraft and some of the attendant and critical law enforcement public safety and national security issues we hope will be considered carefully.

The Department of Justice appreciates this subcommittee's leadership in examining these issues. As we all are aware, the high-tech age in which we now live is offering and will continue to offer

tremendous opportunities and efficiencies in communications technology. The use of wireless telecommunications services in particular has proliferated in recent years.

The Department of Justice recognizes that the ability to use wireless telephones in flight would offer the public tremendous convenience and flexibility. Further, the ability to enhance communications on board aircraft could significantly increase the capabilities of public safety and Homeland Security personnel who protect our citizens on those aircraft.

However, it is an unfortunate reality that despite the tremendous benefits new technologies bring to our society, there are always some who will misuse these technologies for criminal and sometimes lethal purposes. It is, of course, no secret that today's terrorists and criminals use cell phones, among other communications devices, to coordinate their illicit activities. The ability to use cell phones for this purpose in the air adds another dimension to terrorist coordination efforts.

Because of the realities of today's world, we believe that if in-flight cell phone use is to be allowed, reasonable steps can and should be taken to minimize risks to our national security and public safety. With the institution of important protective measures up front, the use of advanced communications technologies on board aircraft can provide great benefits to both private citizens and law enforcement alike.

I would like to share with you a few of the measures that we believe would make this service safer for all concerned.

First, unfortunately, we can anticipate that criminals and potentially terrorists will attempt to misuse cell phones on board aircraft to facilitate their unlawful activities. In such instances, lawfully authorized electronic surveillance is an invaluable and necessary tool for Federal, State and local law enforcement to protect national security and public safety.

The Communications Assistance for Law Enforcement Act, known as CALEA, maintains law enforcement's ability to conduct court-ordered electronic surveillance despite changing telecommunications technologies by requiring telecommunications carriers, including cellular and other wireless carriers, to build into their technologies to have the capabilities necessary to allow law enforcement to implement court orders for electronic surveillance.

Although CALEA would apply to cellular and other wireless carriers in the context of air-to-ground communications, the Department of Justice has asked the FCC to insure that CALEA would remain effective in emergency situations on board aircraft in-flight.

In addition to insuring timely interception capabilities, law enforcement should be able to maximize its ability to respond to the unique circumstances of a crisis on board an aircraft in flight. Unlike on the ground, in the event of a hostage situation or bombing threat in flight, law enforcement cannot physically surround and penetrate an aircraft moving hundreds of miles per hour through the air. In such situations, obtaining knowledge about on-board communications and some control over those communications become critically important for law enforcement and can influence time-sensitive decisions about how to respond to the threat.

Therefore, in order to maximize law enforcement's efficacy in responding to threats on board aircraft, the Departments of Justice and Homeland Security have requested that if the FCC allows air-to-ground cell phone service, it requires certain operational capabilities for such service. These additional capabilities include, for instance, the ability expeditiously to locate on-board cell phone users, interrupt, redirect and or terminate cell phone calls, and identify the origin and destination of cell phone calls to and from an aircraft.

Another area of concern for law enforcement, public safety and national security, is the risk that a terrorist could use a communications device as a remote-controlled, improvised explosive device. Although we recognize that the potential for terrorists to do this already exists, the risk of RCIED use may at least in theory be increased as a result of the ability of aircraft passengers now to use effectively personal cell phones in flight. Therefore, we have recommended a number of steps that could help reduce the risk that a terrorist could reliably trigger RCIEDs on board aircraft in flight.

I want to touch briefly on just one more area. In recent months there has been significant attention given to the effect that in-flight wireless phone use could have on the overall atmosphere of flights and the conduct of passengers, such as an increase in air rage incidents. The Departments of Justice and Homeland Security have recommended that the FCC, in consultation with the airlines, establish rules and policies to diminish the probability that law enforcement's on-board mission will either be complicated or compromised unnecessarily by disputes concerning in-flight cell phone use.

Mr. Chairman and members of the subcommittee, thank you again for the opportunity to testify today and for your attention to important national security law enforcement and public safety issues related to the use of cell phones in flight. We look forward to working with you and the FCC to address these issues going forward.

At this time, I would be happy to answer any questions you may have.

Mr. MICA. Thank you, we will hold questions.

I guess you brought Patrick Kearney with you. Nice to see him. You are not going to make any comments, are you Pat?

Mr. KEARNEY. No, sir, happy to be here today representing Homeland Security.

Mr. MICA. Thank you.

We will recognize David Watrous, President of RTCA. Welcome, sir, and you are recognized.

Mr. WATROUS. Good morning, Mr. Chairman and members of the Aviation Subcommittee. Thank you for the opportunity to appear before you today on the subject of cell phones and similar portable electronic devices. I have prepared a written statement for the record, and that has been made available.

From an aviation perspective, the airborne use of cell phones and similar devices can be characterized as a tradeoff of safety versus convenience. Safety is always paramount. Given that priority, RTCA is working to find ways cell phones can be safely operated

on board aircraft. We plan to have our recommendations regarding airborne use of cell phones available for FAA by December of 2006.

By way of background, RTCA is a utilized Federal advisory committee. Our products are developed by volunteers, mostly engineers, collaborating in a functioning peer review type of environment. FAA uses our recommendations as a partial basis for certifying avionics. Other government and private sector entities use our products when making a variety of aviation decisions.

Portable electronic devices, especially those that intentionally send out signals such as cell phones, have the potential to interfere with avionics. Although PEDs have the potential to interfere with multiple aircraft electronic systems, it is easiest to grasp the impact of interference in the context of aircraft navigation.

When the weather is bad, pilots totally depend on signals from navigation-related avionics to safely fly the plane. Interference can prevent the reception of radio navigation signals or, worse yet, can distort those signals. The risk from interference is greatest when the aircraft is closer to the ground, when it is taking off or landing in bad weather. Should PED interference occur during that period of time, the pilot could unknowingly guide the plane toward a nearby mountain or building, rather than to a safe departure or landing.

RTCA committees have addressed the potential of PED-induced interference four times since the 1960s. In the past, we have focused on potential interference from hearing aids, portable dictating device, portable radios, laptop computers, games, CD players. Each of those committees has concluded that electronic devices, especially digital electronics, have the potential to emit radio frequency signals and interfere with sensitive aircraft communication, navigation, and control systems.

There are two primary aspects associated with potential PED-induced interference. One is linked to the relative power of the PED signal. The other is related to the design and use of portable electronic devices. The signal from a passenger-carried electronic device, although being a very small signal but being transmitted inside the airplane, has the potential to overwhelm the signals used by aircraft systems. This is especially critical if the aircraft is navigating using signals from far-away satellites.

There are also fundamental differences in the design approval and use of avionics first as portable electronic devices.

Avionics and flight control components are rigorously qualified before they are certified for aircraft use. These certified aircraft systems are then operated by trained professional crews.

Portable electronic devices are not qualified to the same standards. Furthermore, PED users generally are not familiar with the operating parameters of their handheld device or the potential hazards of operating that device when airborne.

RTCA's current effort is primarily focused on analyzing potential interference from cell phone and some PDAs. Mr. David Carson of the Boeing Company and Mr. James Fowler of U.S. Airways are leading our activity. The committee includes approximately 150 members from essentially every segment of the aviation and consumer electronics communities. We have got folks from the avionics manufacturers, aircraft manufacturers, airlines, pilot and flight at-

tendant associations, regulatory agencies, consumer electronic device manufacturers and various industry associations.

Our committee is working to do three things: to assess the impacts that transmitting portable electronic devices can have on aircraft operation; to develop strategies to mitigate identified potential interference; and to work with the regulatory authorities to approve the safe use of transmitting portable electronic devices.

The committee is now collecting data, performing analyses and developing repeatable processes to replace anecdotal information.

In summary, sir, RTCA is working with FAA and FCC and is developing recommendations that maintain or improve aviation safety and can accommodate the desire to use wireless technologies on board the airplane.

Thank you for the opportunity to testify on this important subject. I would be pleased to address the questions, sir.

Mr. MICA. Thank you.

I thank all of our panelists for their testimony.

What we will do now is proceed with some questions. Let me start first from the—I would ask the technical side, Mr. Sabatini and maybe Mr. Watrous and Mr. Knapp, we have two systems that are either being used or tested, one is with the pico technology and the other is with the, I guess, the Verizon-United activity. Have all of your agencies checked off on the technologies that are in place, and are they safe?

Mr. Sabatini.

Mr. SABATINI. We have been working with QUALCOMM and American as well as Verizon and United Airlines. While those companies are testing, we are now studying the results of those tests to determine further—

Mr. MICA. You don't have any pico in operation on an aircraft or tested on an aircraft?

Mr. SABATINI. Not as a matter of routine, sir.

Mr. MICA. But are there some on an aircraft being tested?

Mr. SABATINI. On American Airlines, we have the pico system. QUALCOMM, yes.

Mr. MICA. Okay. And we have the Verizon-United?

Mr. SABATINI. Right. That is a voice over, WiFi IP.

Mr. MICA. Right. That is also on aircraft now?

Mr. SABATINI. It is on a Boeing 757 that is being tested.

But, again, I want to make clear, Mr. Chairman, those are being tested, and they have not yet demonstrated to the FAA—

Mr. MICA. But you can't say whether from a safety standpoint yet you have not determined that both of those systems are, in fact, safe with the technology and protections that they have incorporated in the equipment?

Mr. SABATINI. Exactly, sir. We are not ready to move forward exactly and say we are ready to commit.

Mr. MICA. When do you think you will have that evaluation complete?

Mr. SABATINI. That would depend on how rapidly the folks, QUALCOMM and Verizon and the respective carriers, proceed with furthering their application with us. They need to determine and demonstrate to us that they have satisfied all the rigorous test standards that are in place for them to demonstrate.

Mr. MICA. Now, was I told that the WiFi, again, the Verizon, that that may already been on some European aircraft and in use? You don't have any say in that, or do you have any say in that? I guess FAA can say that you can't turn that on or use it in U.S. airspace, is that the case?

Mr. SABATINI. Well, if it was going to be a system operated by a U.S. air carrier, then certainly they would be subject to the rules that apply here in the United States.

Mr. MICA. So, right now, they just have to turn it off if they have got it?

Mr. SABATINI. Exactly. FAA Part 91 is under general operating rules, and I would contend that a foreign air carrier operating in these United States must demonstrate the same thing.

Mr. MICA. Okay. Mr. Watrous, you were introduced as RTCA, and that was—I guess, originally stood for Radio Technical Communications for—or Commission for Avionics. You are the technical side. What is your current opinion of the two technologies that are being tested? Have you reached any conclusion?

Mr. WATROUS. No, Mr. Chairman. The conclusion—

Mr. MICA. When and where will you be in reaching a conclusion, as far as time? Do you actually get into any certification or approval of this equipment?

Mr. WATROUS. We have this group that is open to the public for participation. They met as recently as a week or so ago. They are collecting the data, analyzing the data. They are involved—and, in fact, the QUALCOMM folks and others are participating in that activity.

At the present time, we expect to have recommendations in December of 2006. The reason for that is it gets to be a pretty complicated sort of a problem, depending on the type of device, the aircraft, the environment, et cetera.

As far as certification—

Mr. MICA. Is there a certification process that you have or, Nick—or, Mr. Sabatini, I guess you get into the approval for aircraft and you get into sort of the equipment?

Mr. WATROUS. Yes, sir. I think it is reasonable to say that the recommendation that will come from RTCA will be one of the criteria but not the only criteria used by the Federal Aviation Administration to determine whether or not these devices could be safely used on board the airplane.

Mr. MICA. So you make some type of evaluation. I guess there are all different types of technology.

Mr. WATROUS. Yes, sir.

Mr. MICA. Then I guess it would vary among—if you have different frequencies or different models and things of that sort.

Then, Mr. Sabatini, FAA would get into yes or no for use of this specific equipment on the aircraft; is that correct?

Mr. SABATINI. That is correct, Mr. Chairman.

Mr. MICA. Now, the other—first, I want to cover safety, because that is primary importance. We have to know whether turning these cell phones on puts us at some safety risk. I have thought about this. You know, I would venture to say I probably—I left my cell phone on in my briefcase or something, realized when I got on—I mean, got off, that I still had a cell phone or a BlackBerry

on. I would venture to say any large aircraft, somebody has made the same error, so these planes aren't dropping out of the sky as a result of my forgetfulness or mistake or others. So there is quite a bit of this transmission already going on.

I have always wondered, is that safe? Does it really pose a risk—if you can't say with any honest definition at this point that it does? Mr. Sabatini.

Mr. SABATINI. We do have a recorded incident where—

Mr. MICA. You do.

Mr. SABATINI. It was a regional jet, Canadair regional jet, being operated in Bosnia where shortly after departure they received a fire warning. They returned and executed an emergency landing. It was later determined through an investigation that a cell phone in the baggage in the luggage compartment, so to speak, was left on. That was the determination; and we then subsequently issued an advisory, an air worthiness directive, to correct for the aircraft and to prevent that kind of susceptibility.

Mr. MICA. But nothing domestic?

Mr. SABATINI. Nothing domestic. However, there is test data that certainly strongly suggests that these devices and the electromagnetic field that it produces does, in fact, interfere with our systems.

Mr. MICA. We have sort of progressed, because I remember at the beginning there was no cell phones allowed at all in an onposition when the door closed. Also, when you landed, until you got to the door. You have modified that to a degree. You said that—I think someone said in testimony that the biggest threat or problem might be during takeoff or landing, again due to the massive amount of avionics. So you have sort of made progressive changes in your regulation, is that correct, Mr. Sabatini?

Mr. SABATINI. Well, the regulation is the same as it has always been. There is a regulation that allows an air carrier to make a determination that these devices that they wish to allow to be used on board the aircraft are not, in fact, interfering with the aircraft's systems.

Mr. MICA. So they can already allow this?

Mr. SABATINI. Theoretically. But the technology is not there once you get to an airborne condition. Then we have the issue with the FCC in terms of terrestrial interference.

Mr. MICA. So it wasn't a change in your policy that airlines, when you land now, you can—many of them say you can begin using your cell phones as soon as the aircraft is on the ground. That wasn't a change in your policy?

Mr. SABATINI. It was not a change in our policy. It is what was already permitted by the rule.

Mr. MICA. Another—yes, safety is very important.

I think, Ms. Parsky, the question of use of cell phones for some type of terrorist or criminal activity on board an aircraft, are you checking with both this RTCA group and also FAA? Do you coordinate your efforts so that any device that is used or approved has elements that give you some protection from a security standpoint, or are you just an outsider in this process?

Ms. PARSKY. Well, most of our communications are with the providers themselves. We work with a great number of the providers

to advise them to what we believe the legal requirements are, for what they need to be able to provide to law enforcement but also to help them to voluntarily comply with law enforcement needs. So it is through those interactions with the providers.

Mr. MICA. FAA checkoff, for example. Like you said, they might want to be able to have the some capability to turn all cell phones off at once. You are not checking with the folks that are approving this, either setting some—an evaluation or certification and saying that we are requiring this as a sort of a standard from a national security or security standpoint?

Ms. PARSKY. Well, through the FCC, there are several areas where the FCC looks to the Justice Department to provide a national security assessment. So to the extent that these providers are also being regulated by the FCC, that would come to us to examine what the national security implications are. I am not aware of the same procedures through the FAA, but I may be mistaken.

Mr. MICA. Mr. Knapp, is that your responsibility?

Mr. KNAPP. One of the things that we looked at as part of the licensing process is CALEA compliance; and where law enforcement has raised concerns, we insure they are addressed before the license is issued.

Mr. MICA. Now, if you—after you finish your process, say that we don't have any concerns, then who does that responsibility fall to, FAA?

Mr. KNAPP. Relative to the issues that Justice—

Mr. MICA. Security, right.

Mr. KNAPP. Yes, the securities. Generally what has happened is the licensee or the respective licensee discusses directly with law enforcement their compliance with the statutes. Our experience has been, in every case so far, that their concerns were addressed. Once that happened, then we were in a position to grant the license.

Mr. MICA. I may have additional questions. We will probably submit some for the record later.

Let me yield now to Mr. DeFazio.

Mr. DEFAZIO. Thank you, Mr. Chairman.

On this 757, United-Verizon WiFi, how is the WiFi transmitted from the plane? Is that one of these pico cell devices or how is it? Is it a satellite uplink or how are they doing that? Anybody know?

Mr. SABATINI. Congressman, it is not a pico cell. It is basically an Internet connection that works just as you would have an Internet connection at home, except that it is wireless.

Mr. DEFAZIO. Well, no, I mean, the Internet—I am on the plane. I have my laptop. I am in a, you know, WiFi zone. Okay, that is the airplane. The question is, how does the airplane, you know, coordinate and transmit that data? I mean, they are using some kind of broadband technology of some sort. It must be—is it satellite? Satellite?

Mr. SABATINI. Yes. It is satellite.

Mr. DEFAZIO. Okay. All right.

Mr. SABATINI. And it is a system that meets FAA approval for supplemental-type equipment to be installed on the aircraft.

Mr. DEFAZIO. Okay. I am just trying to get a handle exactly on how that worked. Okay, so if it is a broadband WiFi connection and I want to use voiceover Internet protocol, who is that up to? If you



have certified this device for the plane, who is going to control whether or not someone is using a head set and microphone and talking over the Internet through their laptop computer?

Mr. SABATINI. Once the air carrier has demonstrated to the FAA through this rigorous STC process that our concerns for the safe operation of the aircraft are satisfied, then that carrier may permit the use of voiceover. It then becomes a social issue. The concern that we continue to have is in this use of voiceover, could flight attendants be drawn into an altercation and could this possibly interfere with crew members and interfere with their responsibilities? So, to that extent, I have a continuing safety concern in that regard.

Mr. DEFAZIO. So first we would certify the electronic safety of these devices and their capability, and then there would be another level of review if an airline said we actually want to begin to apply this, and we intend to allow voiceover Internet communication?

Mr. SABATINI. Again, if they have demonstrated that there is no interference with the safe operation of the aircraft, they may allow the use of that voiceover as well as the text messaging piece of it.

Mr. DEFAZIO. All right. Now I don't remember the name of the gentleman from Embry-Riddle. Perhaps Mr. Watrous knows or perhaps you were here, Nick. I don't remember. But we did have a hearing on this previously, and he had done a lot of research on these issues.

He said a damaged cell phone or computer or other PED could cause a problem because it would be transmitting in a way that it wasn't, you know, it is not supposed to. So the question would be, is that still a concern? And if that is a concern, how are you going to verify that all of these myriad individual devices that people bring on—

I mean, first, I guess you would have to satisfy each device and say if this was properly working, you could use this device. But how does one determine whether a device has ever been dropped, damaged, there was a problem with the shielding, modified by the consumer or something like that that could cause a problem? How are we going to know that when people bring these things on the plane and want to start using them?

Mr. SABATINI. We place that responsibility on the air carrier. They are required to not only comply with all the rules and regulations, they are expected to operate at the highest levels of safety. They must demonstrate that when they come to us and tell us that they have developed these tests through an installation through STC, for example, and that they would identify the makes and models that would be permitted on board the aircraft. It would then be up to the air carrier to police that only those makes and models are being used on that aircraft.

Mr. DEFAZIO. This is a nightmare.

So the flight attendants can be walking all up and down the aisles. They can have five different BlackBerries, determining which version—I mean, they all transmit, some radio, some cells, some different—some frequencies are different. So they will have to be scrutinizing for model numbers. You know, everybody pull out the device you want to use. I have got the list. I walk down and

like I put a checkmark on your forehead or something. You can use it. I will remember when I come back I said it was okay for you.

That is a concern. But it still doesn't go to the issue that the professor—and I think the committee needs to, you know, get back in touch with this gentleman. I am sure the committee staff can dig up his name—that if a device has been damaged, which isn't necessarily visible, it still doesn't get to that.

He was saying these devices as regularly configured, cell phones, it is very improbable that they could cause interference with a fly-by-wire in a catastrophic wire navigation. But if damaged it is more probable, and the damage could be not at all visible. It was dropped. It was modified. You can't tell by looking at it.

I mean, how are we going to get to that level of concern? Are we going to have some kind of detector on the plane in addition to the detection device that looks for random signals that are, you know, stronger or outside the realm of what should be going to the device transmitting from the plane and then we would suddenly—like maybe shut something down because it detected a random—I mean, how are we going to deal with that?

Mr. SABATINI. It certainly is a very difficult question to answer, sir. But we have and would require of the air carrier that they address these issues.

Mr. DEFAZIO. Okay. I guess we—that will be interesting to see how they purport to answer that issue.

Mr. Watrous, you are more technically inclined than we are. Do you have any comment on this line of questioning and these concerns?

Mr. WATROUS. Well, sir, we clearly don't have an answer to that question. It is a very difficult question to deal with. But part of this committee activity that is under way is looking at the various combinations and permutations of signals and what reasonably could go wrong, how to mitigate that sort of a thing. In many respects, that is the reason why it is going to take so long to come to some kind of a recommendation.

Clearly, there are probably—well, clearly there are multiple potential solutions to the problem. One is to make sure from analysis and testing, data collection, that we have a pretty good grip on what the variety of interference could be.

Then, as is the case in aviation—and Mr. Sabatini is far better qualified to speak on the subject than I am—after dealing with the technical issue, then there are some also potential policy decisions that can be taken. They might be able to mitigate the problem in the most risk-sensitive duration of flight, sir.

Mr. DEFAZIO. Okay. This is a big hurdle. I have got to admit, and the Chairman might or might not remember, but I am a convert on this issue. You know, I initially bridled at the monopoly of Airphone, the crappy service and the extortionate price they charge. I always thought it would be good—this is sort of, you know, before the emergence of massive consumption of cell phones and sort of the emergence of the people who abuse the privilege of a cell phone to the detriment of everyone around them. But I did engage very much on that issue, because I was interested in breaking the monopoly.

But this professor from Embry-Riddle was very firm in saying, you know, there is a possibility that you could cause serious interference with a fly-by-wire critical operation with—particularly coming from a damaged or modified device.

So we will have to track him down, that testimony down—he had done some research on this—and certainly put him in touch, if he isn't already, with you folks. Because previous to that I had been convinced this is all about gouging the consumers with the ear-phone, which wasn't a very acceptable alternative.

But now I have got a new set of concerns here that I think we are going to have to deal with, since he raised that safety issue. I just want to be sure.

I really hate to think that someone who is carrying on about their date last night has a damaged unit and it causes a critical malfunction and we lose a plane because someone just couldn't wait until they landed on the ground to talk about how great last night's date was. That is just incredible.

We will hear from the flight attendants in the next panel to talk about the social issues, which I think is another difficulty.

Just—again, being a technical person, I heard or have read that there is—you wonder why people are shouting into their cell phone. I have been told that the reason is that because, unlike a land line, it doesn't have feedback, so you don't think you are talking as loud. Is that an explanation that you have heard, or why do people shout into their cell phones?

Mr. WATROUS. Sir, I have heard the same explanation, but I am not qualified to speak on that. I believe that we have a gentleman from QUALCOMM later on the panel, and he is certainly far better qualified to deal with it.

Mr. DEFAZIO. All right. That would be another requirement if they wanted to use these things on planes, that they would have to build in whatever it is they use to reduce the shouting.

The FCC, are you familiar with what causes this phenomena of shouting on cell phones?

Mr. KNAPP. Not as to why they shout, but it is a two-way link, same as a telephone. You should hear—

Mr. DEFAZIO. But there is something about this, this article I read, something about a feedback thing built into a hardwire phone that was left out. But we will ask that, maybe QUALCOMM knows.

Mr. KNAPP. Sure.

Mr. DEFAZIO. Thank you, Mr. Chairman. You have been generous with your time.

Mr. MICA. Thank you.

Mr. Westmoreland.

Mr. WESTMORELAND. Thank you, Mr. Chairman.

This is for Justice or Homeland Security. In light of the FAA recently approving this wireless satellite interconnect WiFi that has been put on some of the United flights, do you have concerns over a terrorist detonating a bomb or some type of wireless explosive device? Would this be wireless system or is your main concern cell phones?

Ms. PARSKY. Well, I think, as we have tried to make clear both in our comments to the FCC and in my testimony today, we are

concerned about the potential for any explosive devices to be used on airplanes, and there is certainly that risk today.

When we are looking at rolling out a new technology and doing it in the very sensitive and unique context of an airplane, we are looking for ways that that risk potentially could be increased. What the focus here is is the increased connectivity, so the potential that there would be a reliable connectivity between those on the ground and those in the air, in the WiFi context, to the extent that is increasing the connectivity, there could be an increased risk.

But I think, as we laid out in our comments, some of the security measures that we are looking for to mitigate those risks are specific to devices that a passenger brings on board his or herself. So not something that is built in but something that the passenger could bring on and could potentially manipulate.

So there is a range of risks that are involved, and what we are trying to do is that, as these new technologies are rolled out, to bring to the attention of both the carriers and the regulatory bodies some of the measures that can be put in place so that we mitigate those risks up front.

Mr. WESTMORELAND. Do you know exactly what those devices would be on the wireless network system or how it would be used to detonate one of these explosive devices?

Ms. PARSKY. Unfortunately, I don't know the technical specifics of the difference types of explosive devices. But what I can say is, with the increase in connectivity, it can cause potentially an increased risk. Certainly if it is not through a device that is already installed in the plane, but a device that you bring on the plane, a passenger brings on his or herself, that could also increase the risk. But I am afraid I am not familiar with the specific mechanics of it.

Mr. WESTMORELAND. Thank you.

Mr. Sabatini, you mentioned that you are leaving some of this up to the discretion of the air carriers. You know, people right now who are very sensitive to the cell phone use, or maybe it is just me, especially when you hear things like the London bombing and the different improvised explosives that is being used in Iraq and Afghanistan and other parts of the world, they are very sensitive to phone use. I know we are going to get more into the social part of it at a later date—or later time today, but if you are on an airplane, it is very annoying sometimes if you have got a chatterbox sitting next to you or maybe a small child. I can't imagine somebody sitting next to me talking in Arabic or some other foreign language on a cell phone for a one-and-a-half-hour flight.

Also, you know, the FAA has certain regulations that it has always put, such as maintenance and, I guess, glide patterns, different things that all airlines have to abide by. If an airline was going to—I am not saying any airline would, certainly not American or anyone else—would put safety, maybe, behind customer service a little bit, that was willing to do that, do you think that is an unfair advantage that the FAA has given some of these airlines to do, rather than what we as the public, the flying public, especially, look at the FAA as somebody that looks at our safety above and beyond everything else that goes on with the airline industry?

Mr. SABATINI. Well, clearly, the FAA statutory authority is limited to safety. Once an air carrier has determined through testing—and it is a rigorous standard testing that we apply—then they would receive certification to use that system on their aircraft.

The aspect of the social issue is one over which I have no statutory authority. However, in considering that, it does begin to provide or give us concern that flight attendants could be drawn into altercations in settling matters between irate passengers. That does give us concern. If that were to be the case, we would go back to the air carrier and ask them to tell us how they are going to prevent those instances from continuing to occur.

It is not just a choice that an air carrier can make to just arbitrarily choose to authorize the use of phones. First of all, it is voluntary for them to use. So in answer, I think, to your question about unfair competition or unfair advantage, as long as an air carrier is able to demonstrate to us through their testing under the rigorous standard that we will apply, they would be authorized to permit the use of PEDs. From a safety point of view, they must assure us that the PEDs are not interfering with the safe operation of the aircraft.

Mr. WESTMORELAND. One last question, Mr. Chairman. Ms. Parsky said that they don't really know right now what type of devices that it would take to maybe use a wireless system to cause some problems. I am assuming that, since the FAA has got all these rigorous tests, you know what these devices are that would be immediate danger or could cause danger by interacting with this wireless network or be able to be used over a wireless network?

Mr. SABATINI. Well, I wouldn't be familiar with what those illegal devices would be, but we would impose and have the requirement that an air carrier demonstrate to us and determine that the systems that they are going to ask to be installed on the aircraft to allow the use of cellular phones meet the standards.

So it is up to the air carrier to decide, of the many hundreds of makes and models, which makes and models they would allow to be used in that approval. It would then be incumbent upon them to have the procedures in place to advise their passengers that these are the makes and models that are approved for use, and it is up to them to police that only those are being used.

I understand that the technology may, in fact, prevent the use of those systems or cell phones that are not compatible with what has been approved on board the aircraft for transmitting a signal.

Mr. WESTMORELAND. But your rigorous test, you think, is rigorous enough that it sifts and eliminates and vets through all these things that could be used?

Mr. SABATINI. I think the best way to answer that question, sir, is to tell you that our rigorous testing standards apply for original-type certification of an aircraft. That today we have the safest air transportation system in the world, and it is that kind of standard that we will be applying.

Mr. MICA. I thank the gentleman.

Mr. Poe.

Mr. POE. Thank you, Mr. Chairman. Just a couple of questions.

We all know there are thousands and thousands of flights in the United States every day, thousands of people in those planes. I

would daresay that probably in every one of those situations there is somebody that had a computer, a GameBoy, a BlackBerry, a cell phone or two or three that is left on, probably in every flight.

Has there ever been an instance in the United States where any of those items have caused a problem with that aircraft? Do we know of any situation where that problem has ever occurred because somebody left a cell phone on or a computer or a BlackBerry or Blueberry or GameBoy or any of those things?

Mr. SABATINI. As I said earlier, sir, there is only one recorded instance, and it was in Bosnia. Here in the United States—that same type of aircraft is operated here in the United States. It is a Canadair regional jet. The only data that we have is anecdotal.

The other data that exists is through testing, which is going on in cooperation with the RTCA, which is a consensus group and which has many representatives from the industry to bring to light those kinds of issues that you are addressing, sir.

Mr. POE. So it has never happened that you know of in the United States.

Mr. SABATINI. That I know of.

Mr. POE. Yes. Would you agree that there is probably somebody on an aircraft that has purposefully or accidentally left one of those computer devices on?

Mr. SABATINI. That is a probability.

Mr. POE. Yes.

As far as the other question I had, Ms. Parsky, following up on Mr. Westmoreland's comments, we are all concerned about air safety. But what makes us think if some outlaw is on a plane that wants to use a computer device like a phone to do us harm that they are going to turn it off because somebody tells them to? I mean, it defies logic that, if that is going to occur, they are not going to turn it off. They will go down to the lavatory and do whatever they have got to do.

So I ask that question because are those capabilities, in your opinion, now possible to cause damage to an aircraft by somebody using a cell phone, whether it has been modified or tampered with or not? Are those capabilities—do those capabilities currently exist?

Ms. PARSKY. Well, I think that, as I have said, this technology is a growing, burgeoning technology. So what we are looking at is an increased connectivity. So to the extent that today you might have the ability to connect from very low altitudes in an airplane to the ground without any type of enhanced technology, some of the technologies that have been discussed today would increase that connectivity and provide it more reliably from higher altitudes.

So, as of today, unless they are experimenting with some of these technologies on the particular aircraft you are flying on, you would not be able to go into a lavatory and get a reliable connection. If some of these new technologies were put in place, that would be able to be done more reliably.

I think the one important point that I want to make is that what law enforcement's position is here—there are some increased risks, such as the diverse ways that these types of technologies could be used as an explosive device, but then there are also some opportunities.

So as this new technology is rolling out, what we are asking is that the industry—that the regulatory bodies take into consideration some of the enhancements to law enforcement's capabilities that could be provided with these valuable technologies at the same time. So that in these very delicate situations there are capabilities that are built in so that we are better able to protect the public.

Mr. POE. Well, let me just ask it a different way. Are there current abilities to take a cell phone and not necessarily get a signal but use it as a device to detonate some other object on the plane or interfere with the frequencies, that cause the plane to go down instead of up? Any of those things—so there are current capabilities using some type of Blueberry, BlackBerry, GameBoy, computer, all those things that we know about. Can you use one of those devices to do harm to the aircraft currently?

Ms. PARSKY. There is always the possibility that there will be some creative use of a device, a watch or something, anything else that someone may be carrying on board; and the screening procedures will be in place so those items will be detected before they get on board. So DHS may be able to speak a little better to the screening procedure, but whether it is a cell phone or noxious object that someone is carrying in their bag, there is always the potential.

Mr. POE. All right. Thank you.

Do you want to address that? You look like you want to answer that question.

Mr. KEARNEY. I am not sure what gave you that impression, sir, but I would mirror the comments that you have just heard. I would also say that it is not a new threat. What you are referring to, our layered screening system is in place to mitigate the risk of use of these electronic devices for that sort of interference you had suggested; and as we move down the road, improve our screening, deploy new and better technologies, we will get better at it.

Mr. POE. All right. Thank you, Mr. Chairman.

Mr. MICA. I thank you.

There being no further questions for this panel—

Mr. DEFAZIO. Well, Mr. Chairman.

Mr. MICA. Did you have any?

Mr. DEFAZIO. Just along the last line of questioning, as I understand, it was sort of a two-part question.

One, we have located the professor at Embry-Riddle who testified previously about the potential for interference with critical flight systems. We will be getting in touch. I would just read his name into the record.

But also the second thing was, can you use a cell phone as a—you know, can you call another cell phone and use it as a triggering device? Yes, I mean, we went through that in Iraq for a while until they started jamming cell phones and automatic door openers. They have gone through a series of things. Anything could work that way.

I think the point Ms. Parsky is making is that, right now, it is entirely reliable that you are going to reach that unit on the plane, but if you are going to enhance that plane's capabilities, it wouldn't be reliable and you could choose a particular point during the flight at which you wanted to take that plane down. This is just another

element of risk, is what you are saying. You know, I mean, there are a lot of risks.

We won't—we were just visiting all the issues about explosives on planes and how bad our system is, the fact that we are not looking, as the Chairman and I have talked about many times, for plastic explosives in carry-on bags with passengers, et cetera, but that is another issue for another day.

Thank you.

Mr. MICA. Again, we—

Mr. DEFAZIO. I was just going to read his name. Could I?

Mr. MICA. Yes.

Mr. DEFAZIO. It was Albert D. Helfrick—H-e-l-f-r-i-c-k—Professor at Embry-Riddle Aeronautical University, Daytona Beach.

Mr. MICA. Thank you.

As I started to say, we have raised a number of issues today; and I appreciate your testimony. You are contributing to the question whether or not cell phones should be permitted on passenger aircraft.

I think we still are looking for some answers to some of those points that were raised today. We will probably have some additional questions that we will submit to each of the panelists. There are also some gray and security areas that we may want to question you about in a nonpublic forum.

But I appreciate the cooperation of each of the panelists. Again, I apologize for the delay during the votes.

What we will do is excuse you at this time, and we will call our second panel.

Mr. MICA. The second panel of witnesses today consists of Patricia Friend. She is the International President of the Association of Flight Attendants with CWA, AFL-CIO. Mr. Greeley Koch, President of the Association of Corporate Travel Executives. Mr. Paul Guckian, who is the Senior Director of Technology at QUALCOMM.

I would like to welcome our witnesses in the second panel.

Again—well, Ms. Friend, I know, has been here before. But if you have any lengthy statements or material you would like to be made part of the record, you could submit it through the Chair. We try to get you to summarize your statements in approximately 5 minutes. That leaves us some time for questions.

**TESTIMONY OF PATRICIA A. FRIEND, INTERNATIONAL PRESIDENT, ASSOCIATION OF FLIGHT ATTENDANTS - CWA, AFL-CIO; GREELEY KOCH, PRESIDENT, ASSOCIATION OF CORPORATE TRAVEL EXECUTIVES; AND PAUL GUCKIAN, SENIOR DIRECTOR, TECHNOLOGY, QUALCOMM, INC.**

Mr. MICA. So, welcome back, Patricia Friend, again, representing the International—actually, she is the International President and representing the Association of Flight Attendants. Pleased to have you. Maybe we will get to find out whether we should not only arm the pilots as we have done but now that we may have cell phones, we may need to arm the flight attendants.

Welcome, and you are recognized.

Ms. FRIEND. Thank you, Mr. Chairman; and thank you, Mr. DeFazio. Thank you for the introduction. I can now skip that part.



I am here to testify today to voice our strong opposition to the lifting by the FCC and FAA of bans on the use of cell phones on airborne aircraft. Lifting the ban on cell phones on aircraft is a bad idea. It would not only create a nuisance, potentially interfere with aircraft operation and enable a possible tool in the terrorist arsenal. It would impair the flight attendants' ability to maintain order in the cabin, undermining aviation safety and security.

Our flight attendants have reported to us numerous incidents of conflict over turning off cell phones before takeoff. Many of these result in the removal of passengers from flights. These incidents cause delays, they distract attention from crew safety briefings, and they undermine crew authority. In the closed quarters of the airline cabin, with passengers already concerned about security and confused about when and where they may and they may not use cell phones, tensions do run high.

In a very recent incident, a very belligerent passenger refused to turn off her cell phone prior to takeoff despite repeated requests by the flight attendant.

Following final safety checks and an additional cabin announcement to turn off all electronic devices, the passenger continued her call and refused to stop. Finally, after the flight attendant notified the captain and he threatened to return to the gate, the passenger did shut off the cell phone.

In another case, a captain encountered a navigation problem during initial taxi away from the gate area. He pulled off the taxiway and ran system checks. Three separate announcements were made to shut off all electronic devices. However, one passenger continued to talk on their cell phone. The passenger behind him alerted the flight attendant, who communicated finally the seriousness of the problem to the passenger, persuading him to turn off his cell phone. Although it is uncertain whether the navigation problem was related to the cell phone, the system did clear up once the phone was turned off, and the flight proceeded.

These are just two of the many incidents that happen on a daily basis on board the thousands of flights in this country. All of these incidents suggest that declaring open season for cell phone use on board aircraft threatens to create an unmanageable situation, undermining order in the cabin, and jeopardizing aviation safety.

As has already been noted here this morning, over 7,800 written comments from the public, industry, and government agencies have been submitted in response to the proposed FCC rule change. The vast majority of those comments strongly favor keeping the ban on in-flight cell phone use. This is consistent with a national poll that we cosponsored with the National Consumers League of airline passengers earlier this spring. That poll found that 63 percent of air travelers want to keep cell phone restrictions in place, and said that cell phone use in the cramped confines of the airplane cabin would be annoying and divisive. Seventy-six percent of business travelers identified the number one problem of allowing cell phone usage on board the aircraft as creating a disruptive, noisy, and annoying environment.

Among some of the poll's other findings, 78 percent agreed that cell phone use on board the aircraft could lead to increased passenger unruliness and interfere with the flight attendants' ability

to maintain order. Eighty-seven percent were alarmed when they were informed that pilots have reported many cases of problems with navigational equipment possibly caused by cell phones or other electronic devices used in flight. Seventy-eight percent of those polled believe that cell phones might distract passengers from hearing life-saving instructions in an emergency, and 78 percent believed that allowing cell phone usage on board the aircraft could help terrorists execute a hijacking plan more effectively.

But it isn't just the public and the flight attendants that agree that cell phone usage on board the aircraft is unnecessary. In a letter to FAA Administrator Marion Blakey, Cingular executive vice president Paul Roth wrote: We believe there is a time and place for wireless phone conversations, and seldom does that include the confines of an airplane flight.

Law enforcement experts report that allowing public use of personal cell phones on airborne aircraft could actually facilitate terrorist activities.

The Association of Flight Attendants categorically rejects the notion that cell phone use on an aircraft is a necessity. Allowing cell phone usage would result in the vast majority of our time, effort, and energy being diverted from important safety and security duties to becoming an in-flight cell phone enforcer.

We urge this subcommittee and all of Congress to work with the FCC, the FAA, and other government agencies to ensure that existing bans on the use of cell phones on board commercial airplanes in flight are kept in place.

One further thing to consider from the poll that I previously referenced is that 90 percent of the respondents agreed that if in-flight cell phone use is approved, the aircraft should be fitted with systems that would allow the flight crew to instantly disconnect all cell phone calls during safety and emergency announcements.

I ask the Chairman to accept our written testimony and attached comments where we outline our concerns in much more detail. After you have had an opportunity to examine this document, we are certainly available for further clarification. Thank you.

Mr. MICA. Thank you for your testimony and your entire statement. And the information will be included as part of the record, without objection.

Mr. Greeley Koch, president of the Association of Corporate Travel Executives. Welcome, sir. And you are recognized.

Mr. KOCH. Thank you very much, Mr. Chairman, Mr. DeFazio. I appreciate the opportunity to speak today. I would just request that my full statement be entered into the record, and I would just summarize my comments.

Mr. MICAS. Without objection, so ordered.

Mr. KOCH. Thank you. I am speaking today on behalf of the 2,500 members of the Association of Corporate Travel Executives, who represent the business travel interests of major corporations, as well as the aviation, hospitality, surface transportation, and support industries of the travel sectors in 30 countries around the world. Our association seeks to maximize the corporate return on travel investment while boosting the productivity and effectiveness of the business traveler on the road.

Business travelers derive the most out of their travel time through a number of electronic devices that are an extension of their offices. The cell phone is undoubtedly the most common of these. Judicious use of the cell phone will convert isolated hours spent in flight into productive, revenue-generating potential, especially on long flights. Fifty-three percent of our members responding to a poll indicated that business travelers would be more productive through cell phone access while in flight. Ninety-two percent of our members overwhelmingly indicated that they would favor a move permitting text messaging or type, not talk, either via cell phones or BlackBerry-type devices, allowing travelers to access critical e-mail while en route.

ACTE is not insensitive to the concerns of others who predict that the airlines will reverberate with endless musical tones of cell phones or, worse, incessant loud conversations. Our association recommends that any cell phone use on commercial aircraft require mandatory use of a headset, and that cell phones be set for silent ringing in the vibrating mode. The prescribed in-flight use of cell phones could be detailed in seat-back cards, in-flight magazines, or the announcements at the beginning of each flight. I think eventually the public will become informed, and the process will become standard operating procedure.

Allowing the use of cell phones en route will undoubtedly accelerate the development of a more advanced technology to mask background noises. Noise-canceling electronics for microphones and earpieces are already commercially available for the recreation market, and these enable individuals to speak and be clearly understood in a normal voice tone against a variety of strong background noises. The cost and availability of these devices will drop as market demand increases. There could even be a revenue-generating opportunity for the airlines in having headsets available for purchase or rental on each flight.

So, on behalf of ACTE, we request the continued review of regulations regarding the cell phone use on commercial aircraft with the headset caveat, or to recommend an action allowing the transmission of text.

Thank you, Mr. Chairman. And that just ends my summary comments.

Mr. MICA. Thank you.

We will hear now from Paul Guckian, senior director of technology with QUALCOMM.

Welcome. You are recognized.

Mr. GUCKIAN. Good afternoon, Mr. Chairman and members of the Aviation Subcommittee. I am honored to testify before the subcommittee today on behalf of QUALCOMM, Incorporated.

QUALCOMM is a leading developer and supplier of digital wireless communication products and services, and is the innovator of code division multiple access, CDMA, a technology that has become the world's standard for the wireless communication industry.

I would like to discuss today the research and development that QUALCOMM has conducted in the area of wireless communications for aviation use.

QUALCOMM is an original member of RTCA Special Committee 202, and our participation in this committee and interaction with

other industry groups has led QUALCOMM to engage in a program of development, analysis, and testing to assess the potential for mobile phone interference with aircraft systems and also with terrestrial mobile phone networks.

In addition to evaluating today's interference scenario whereby cell phones are left on while the aircraft is in flight, QUALCOMM has been doing research and analysis into the onboard pico cell concept. A pico cell is a very small, low-powered unit that uses standard cellular technology to provide coverage in small areas with a high number of users; for example, in buildings or in cruise ships. Such a device can be installed in an aircraft to provide connection to passenger wireless devices. The pico cell signals are then connected to the ground through a licensed air-to-ground link, either satellite or terrestrial-based. A CMA onboard pico cell enables both voice and data services, data services being text messaging, Internet access, e-mail, and multimedia downloads. The onboard pico cell can be configured to support data services only and prohibit voice, if necessary.

From June 2003 to the present, QUALCOMM, in partnership with companies such as Boeing and American Airlines, has conducted significant test programs on board commercial and general aviation aircraft using CDMA, pico cell, and multiple CDMA phones. We have made both ground-based and in-flight measurements of cellular and PCS frequencies. On July 15, 2004, QUALCOMM and American Airlines conducted a successful in-flight proof-of-concept demonstration of the CDMA pico cell technology. Reports from the various test programs and demonstration have been submitted to the RTCA and also to the FCC for review.

The test results to date are promising. The on-aircraft testing has resulted in no detectable interference to aircraft systems from CDMA technologies. QUALCOMM supported NASA Langley in a test and analysis program that they performed on 3G mobile phones, and NASA reported that in most cases the phones' unintentional transmissions have better safety margins than laptops and PDAs that are approved for airborne use today in certain segments of the flight.

One key feature of CDMA technology is the range of the closed loop power control. When CDMA phones are close to the cell tower, or the pico cell in the case of the aircraft cabin, they transmit intentional signals at power levels as low as microwatts. This very low level of power significantly reduces the potential for interference to the aircraft systems as well as the terrestrial networks. Other technologies do not power control down to the levels of CDMA and so present a higher potential for interference. Further work is required to determine what level of interference is tolerable by the terrestrial carriers. QUALCOMM believes that it should be up to the wireless carriers to decide whether they want to accept a low level of interference in exchange for the revenue-generating opportunities.

QUALCOMM will continue to support RTCA SC-202's work to evaluate compatibility between transmitting passenger devices and aircraft systems. We are also pursuing collaborative test programs to evaluate multiple-technology pico cells, which will include CDMA with GSM and Wi-Fi access points.

QUALCOMM is aware of the number of public interest issues that have been raised, and we would like to offer a few comments in this area. QUALCOMM would like to highlight the fact that data services are a key component of wireless connectivity, and today's 3G cellular and PCS networks have evolved to support these key services. The same data services that are offered today by the terrestrial service providers would also be enabled through the use of a CDMA pico cell on board the aircraft. This would provide passengers with in-flight access to text messaging, e-mail, Internet access, games, et cetera, on their personal phones, PDAs, or CDMA-enabled laptops. The multiple devices shown by the Chairman in the opening comments are converging into one device, and that device is the cell phone. Even if cellular and PCS connectivity is not authorized or provided on the aircraft, the passengers will want to use the nonwireless features of the phones, such as games, music player, personal organizer, and preloaded media content.

In conclusion, QUALCOMM, in collaboration with the aviation industry, has done considerable research on the question of interference to avionics and terrestrial wireless networks for the use of CDMA devices and pico cell technology. The system shows promising capabilities for allowing aviation passengers to use a wide range of mobile devices while in flight without compromising the safety of the aircraft or the reliability of the terrestrial networks. Some additional work needs to be completed, and we stand ready to assist government agencies in completing the necessary research.

It is important to note that today's mobile phone has many capabilities beyond voice. Increasingly, consumers are relying on their mobile device for such applications as text messaging, e-mail, Internet access. These applications are available today and will become the expectation of flying consumers as the use of mobile electronic devices and 3G data services continue to grow.

It is therefore imperative that government regulations address the complex safety and public interest issues related to the use of portable electronic devices. We applaud the FAA and the FCC for undertaking reviews of the regulations in this area. And this concludes my testimony.

Mr. MICA. Well, thank you.

And as a follow-up, let me just start with a question. You believe, Mr. Guckian, that it is just a matter of time and technology that we will be using both cell phones and text messaging and other capabilities of electronic devices on aircraft, and it can be done safely?

Mr. GUCKIAN. Mr. Chairman, the work that we focused on is on our own CDMA technology as a complex problem when you look at other wireless technologies that are involved. The GSM community has done a lot of work, and that is where we hope to collaborate.

Mr. MICA. One of the biggest objections seems to be that people tend to shout, as Mr. DeFazio said, or raise their voice to use their cell phone. And we already have people talking. I mean, you can't bind and gag people and make them be silent for the duration of their flight. And I have been inconvenienced by a number of conversations I don't need to detail here today. But is that also a technical problem that can be resolved?

Mr. GUCKIAN. You know, the question that was raised earlier about the sight-tone effect, and do cell phones have the same feature as the landline? They do have sight-tone effect. And so from the technical side, that feature is there. Our observations have been that the aircraft environment is noisy, and it is the free ear, if you like, that is perceiving this high level of noise that is causing passengers to talk loudly.

In the American Airlines demo, we had a number of press and VIPs, and they all began to talk very loudly. The phone is very tuned to voice frequencies. They very quickly adapted to reducing their voice level almost to a whisper, and as the people on the receiving end realized there was distortion as a result of them talking so loudly.

Mr. MICA. The other thing, too, we have seen the use of cell phones when the plane lands now, and I think many people find that convenient because possibly they have someone who has been circling the airport to pick them up, or you are late, or you can better coordinate your connection with those who are meeting you. That doesn't seem to have disrupted airplane humanity as we know it, has it?

Mr. GUCKIAN. On the social issue side, I think we defer to the flight attendants, the people who are having to manage those social issues. I think for the personal passenger that still can be irritating.

Mr. MICA. I have seen even, Ms. Friend, a few flight attendants making cell phone calls when the plane lands; in fact, heard them calling someone they were either meeting. And, again, it doesn't appear to be—now that they have opened up that little window of opportunity from the time the aircraft lands until it gets to the boarding point. So, again, it is becoming a more common practice, and maybe not that irritating once people are accustomed to it. Do you think they will get used to it or not?

Ms. FRIEND. I think the key point in what you are talking about is it is a short window of opportunity. It is a very limited period of time. So for the 5 minutes or maybe 10 that it takes to taxi the aircraft in and park it, I think people are willing to tolerate the sort of—it is all a part of the getting ready to get off the airplane process. I think that is different than a 7-1/2-hour flight over the Atlantic in the middle of the night where you would like to sleep, but someone else would rather conduct business on the cell phone.

Mr. MICA. You can't bind and gag folks. I have been on transatlantic flights where they stay up all night talking and drives you crazy. I have been on domestic flights from here to Florida, and people's conversations are very loud and disturbing.

Ms. FRIEND. And if they don't have anybody with them to talk to, then they would be able to call somebody on the cell phone and talk to them.

Mr. MICA. Have you all adopted a policy against the so-called tap and not talk?

Ms. FRIEND. We haven't. We have discussed the distinction between actually talking on the cell phone and being able to e-mail, use a BlackBerry or whatever. We are waiting for the results of the RTCA study, which they have said they will not be finished with phase 2 until next year. So clearly that is very important to all of

us in the aviation industry, what their recommendation is about the overall safety of the use of these electronic devices.

Mr. MICA. Thank you.

Mr. DeFazio.

Mr. DEFAZIO. I am pleased to hear that you are keeping an open mind on that, and I think that may be—and I understood from Mr. Guckian that that would be a sort of—and also from Mr. Koch his fall-back position if you are not going to allow voice, but at least allow data transmission if it is safe, and if we can totally qualify that it would be safe with various devices.

Mr. Koch, did you ask this question in your poll: Would you approve of the use of cell phones on airplanes if you frequently were seated next to someone talking very loudly and incessantly during a transcontinental airplane flight?

Mr. KOCH. We did not ask that question.

Mr. DEFAZIO. I think you might get a different answer. I mean, people are saying it would be convenient, and I will just use it for business purposes, but they are not thinking of people who use cell phones for recreational purposes, which is becoming more and more common as the price of using cell phones drops. I mean, there are people who never go anywhere without a cell phone in their ear and carrying on a conversation. And we have already come up with the problems that are being documented in terms of driving and distraction and those sorts of things.

So I just think that vaulting into this environment, and, as was said previously, is a loud environment, you know, which would probably have people talking even more loudly than they do walking down the street or sitting in restaurants and other places. So I think you might want to sort of check that out with your constituents before—because I get a very different reaction in talking to business travelers and other frequent fliers. I find very few who feel that they need to have access to voice. They would like to have access to data. I mean, data is more succinct communication; you can get the critical stuff out there. But I just kind of question that statistic.

But anyway, thanks for being here, and we will continue to wrestle with this. And my intention first and foremost is safety, and I am going to be following up with the gentleman I talked about earlier and his concerns, and being sure that those are addressed, and any review of this technology, and answering all those questions.

It is interesting to hear that CDMA loop issue would prevent a stronger transmission, you know, if there was a proximate device. But, of course, if there isn't a proximate device, then the CDMA would have the same signal strength as other systems; is that correct?

Mr. GUCKIAN. Yes, that is correct. At equivalent power levels.

Mr. DEFAZIO. Thank you.

Thank you, Mr. Chairman.

Mr. BOOZMAN. Thank you, sir.

Mr. Guckian, I understand that the FAA approved a pico cell network designed by your company for a charter flight using MD-80 aircraft. And I guess that was up to 15 calls were simultaneously handled. What is the effect when you have hundreds of

calls handled at one time on a large Boeing 747-like plane? Is the technology there, the cost, capacity limitations, things like that?

Mr. GUCKIAN. The pico cell technology that we use for the American Airlines proof-of-concept demonstration has a capacity of over 100 simultaneous calls. The limiting factor is the air-to-ground link. And we were using the Global Star satellite system, and that system, airborne system, did have a bandwidth limitation that would only allow 15 simultaneous calls. So the pico cell itself will support over 100 calls; and if the bandwidth to and from the aircraft—and I would give an example of something like Connexion by Boeing that has megabits per second—then they could certainly support up to 100 calls.

Mr. BOOZMAN. Ms. Friend, Amtrak and other commuter trains have designated quiet cars. You know, I guess it kind of calls to mind in the old days when you had no smoking and smoking sections on the airplane and however that worked. I mean, is there any thought of anything like that, or configurating maybe an area next to the bathroom or something where there is an area that you can go—well, you know, some sort of thing to kind of segregate things where somebody didn't want to do that?

Ms. FRIEND. There is no ability to create separate quiet cars on board an aircraft cabin. And the reason we now have no smoking instead of smoking and no smoking sections is because it doesn't work, because somewhere on that aircraft cabin those sections have to meet, and there was no way to protect the other occupants of the airline cabin from the effects of second-hand smoke. And just as there would be no way—because if you are sitting in the last row of the no cell phone section, the people right behind you are the first row of the cell phone section. So we don't have the same ability in an aircraft cabin as Amtrak has to really segregate the situation.

Mr. BOOZMAN. Mr. Koch, you know, again, Ms. Friend and others have raised the question of having the annoying seatmate. And certainly if you are—myself, the Members fly as much as anybody. To be sitting in the middle seat with two people perhaps chatting away on either side certainly could be annoying.

You talked about using headsets, requiring passengers—or having headsets, that you could maybe do that down. I guess the question comes, what about the ones that don't have the headsets?

The other thing is that in your polling—refresh my—how does that run in the sense of what kind of numbers are you seeing?

Mr. KOCH. We were seeing numbers, 53 percent supported repealing the ban. And when you look at those numbers, because it was so close—

Mr. BOOZMAN. Was that on specifically cell phones, or was that on BlackBerries and that kind of technology?

Mr. KOCH. That was on cell phones. And then 92 percent were as far as BlackBerries, repealing that ban. And I think because the cell phone was so close, you know, people do look at the airplane as the last bastion of quietness, if you will, while they are traveling, unless you do get the seatmate next to you that wants to talk the whole flight. And so I think that is where we were seeing the polling being as close as it was.



But then the Members were also saying, if we do have the text capability—because we somehow want to remain productive. And I think that is what is important to the business traveler is it is sometimes about choice. You know, most of the time you just want to read or fall asleep, but then if you are in that business, still you also want to have the chance to continue it or to respond to it.

And I think, as far as the headsets, we are advocating that once you look at the safety issues, then we do think that there does need to be some sort of concern about the respect on board, and that headsets or whatever that can be developed to make the conversations be normal-type voice conversations instead of the shouting, I think, would go a long way to making the environment much more better on board the aircraft.

Mr. BOOZMAN. Thank you. You know, the other thing is, I mean, even in the context of different flights, you know, a 2:00 flight is different than a 6:00 a.m. flight where you probably got up at 3:00 or 3:30 to get through security and the whole bit.

So, again, we thank you all so much. Thank this panel and the other panel for being here. So, again, thank you for your input, and the meeting stands adjourned.

[Whereupon, at 12:57 p.m., the subcommittee was adjourned.]

**Congressman Russ Carnahan (D-MO)**  
**House Transportation Committee**  
**Aviation Subcommittee**  
**Hearing on Cell Phones on Aircraft: Nuisance or Necessity?**  
**Opening Statement**  
**July 14, 2005**

- Thank you, Mr. Chairman.
- As we all know, the FCC has recently proposed a rule allowing the use of cell phones and other wireless devices on aircraft.
- Although it appears that the FAA is unlikely to approve a similar change and lift its ban on these devices, it is important for us to examine the safety implications of what the FCC has proposed.
- As new technologies emerge, it is also important for us to examine how airlines, airline workers, and air travel consumers would be affected by cell phone and wireless use during flight.
- I thank the Chairman and the Ranking Member for holding this hearing, and I look forward to hearing testimony from the witnesses today.

**OPENING STATEMENT OF  
THE HONORABLE JERRY F. COSTELLO  
AVIATION SUBCOMMITTEE  
CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY?  
JULY 14, 2005**

- I want to thank you, Chairman Mica, for calling today's hearing to examine the potential use of cellular telephones and other personal electronic devices (PEDs) on airborne aircraft. This hearing is timely, considering the Federal Communications Commission's (FCC) proposal to relax its ban on using cell phones on airborne aircraft. I believe that before we expand the allowable uses of cell phones and perhaps other PEDs onboard aircraft, we must consider both the safety and the social consequences of changing the current regulations.
- Both the FCC and the Federal Aviation Administration (FAA) currently prohibit the use of cell phones while on board U.S. registered aircraft because of the potential for electromagnetic interference with ground based cellular networks as well as with aircraft communication and navigation systems. FAA regulations also prohibit the use of other PEDs, such as Blackberries, during flight.
- In December 2004, the FCC issued a notice of proposed rulemaking to begin to address policy and technical options for permitting controlled airborne operation of "off the shelf" cellular telephones to be used during flight. One such technical option is the use of pico cell technology, which is an onboard base station that would collect signals from airborne cell phones, and perhaps other wireless devices, and transmit them to a specialized ground-based cellular network or a satellite system.
- Importantly, any measures the FCC takes with respect to cell phones on airborne aircraft remain subject to FAA rules as well as policies of individual aircraft operators. It is my understanding that the FAA has no intention of changing its rules regarding the use of cell phones or other PEDs on aircraft.
- However, the FAA has procedures to allow, on a case-by-case basis, air carriers to submit applications to certify wireless devices for use onboard aircraft, so long as the carrier can prove that the devices will not cause interference with the aircraft's navigation systems. To date, FAA has approved an application submitted by United and Verizon to install a Wi-Fi system, which provides

Internet access, for United's B-757-200 aircraft. I look forward to hearing from the FAA and the FCC about their respective work on these issues.

- Many groups, including flight attendants and certain members of the wireless industry, have publicly advocated against lifting the cell phone ban in particular, both on a safety basis, including the potential increase of "air rage" incidents, as well as for social issues.
- Moreover, the Department of Homeland Security (DHS) and the Department of Justice (DOJ) have raised important security concerns in their comments on FCC's proposed rulemaking. Among their concerns are the potential increase for wireless communications to be used as remote-controlled improvised explosive devices, and the concern that federal law enforcement officers' missions may be compromised to deal with air rage passengers. I look forward to hearing DOJ's analysis of national security implications that may result from lifting the wireless device ban.
- Thank you once again for calling this hearing, and I look forward to hearing all of the witnesses' thoughts on the use of wireless devices on airborne aircraft.

TESTIMONY OF  
PATRICIA A. FRIEND  
INTERNATIONAL PRESIDENT

ASSOCIATION OF FLIGHT ATTENDANTS –  
CWA, AFL-CIO

BEFORE

THE SUBCOMMITTEE ON AVIATION OF THE  
TRANSPORTATION AND INFRASTRUCTURE  
COMMITTEE

U.S. HOUSE OF REPRESENTATIVES

WASHINGTON, DC

July 14<sup>th</sup> 2005

Thank you Mr. Chairman and Ranking Member for the opportunity to testify on the important issue of “Cell Phones on Aircraft: Nuisance or Necessity.” My name is Patricia Friend and I am the International President of the Association of Flight Attendants - CWA. Today’s hearing poses an important question for all of us who are concerned about the safety and security of commercial aviation: “Are cell phones on aircraft a nuisance, or a necessity?” With my comments today I will answer this question from the perspective of the 46,000 flight attendants who are represented by the Association of Flight Attendants. These AFA members are the last line of defense when it comes to the safety and security of the aircraft cabin, a fact I urge this Subcommittee to bear in mind when considering my comments today.

The recent publication of a Federal Communications Commission (FCC) Notice of Proposed Rulemaking<sup>1</sup> (NPRM) suggests the possibility of rescinding the FCC’s longstanding ban on the use of cell phones on board airplanes in flight. In response, AFA has submitted written comments to the FCC. This document summarizes some key points from those comments as well as the responses of other interested individuals and organizations. First, though, I will present a brief history of the “cell phones on aircraft” issue.

For many years, unauthorized use of cell phones on airplanes has been a significant safety and security concern to flight attendants. Our members are not only concerned with the possibility of random, unpredictable electromagnetic interference events that could interfere with an aircraft’s operations; they also fear the impact on cabin operations of increasing numbers of passengers testing the tolerance of passengers and crewmembers alike for behaviors that are contrary to both federal law<sup>2</sup> and airline policies. With recent decisions by several domestic and international airlines to allow the use of cell phones during taxi-in from the landing runway, flight attendants already are

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<sup>1</sup> *Amendment of the Commission’s Rules to Facilitate the Use of Cellular Telephones and Other Wireless Devices Aboard Airborne Aircraft*, WT Docket No. 04-435, Notice of Proposed Rulemaking, FCC 04-288, Released Feb. 15, 2005.

<sup>2</sup> 49 USC 46504, Interference with Flight Crew Members and Attendants.

deeply concerned that operational disruptions triggered by cell phone use, such as incidents of air rage, are on the rise.

To help ensure that regulators and industry anticipate and address potential impacts of cell phone use on cabin operations, during the past two years staff from the AFA Air Safety, Health and Security Department have participated on the RTCA, Inc.<sup>3</sup> Special Committee 202 (SC-202). This committee, acting on a request from the Federal Aviation Administration to develop policy on the use of cell phones and other portable electronic devices (PEDs) on aircraft, published a Phase 1 guidance document in October 2004 that included specific recommendations to limit potential adverse human factors impacts on operational safety.<sup>4</sup> For example, unauthorized operation of cell phones is often the result of a confusing array of prohibitions that may differ with the phase of flight or aircraft type and equipment, not to mention variations in airline operator policies and international regulations. Such unauthorized use of cell phones may distract passengers during crew safety briefings or generate passenger/crew and passenger/passenger frictions. From a human factors standpoint, these situations seriously undermine crew authority and ultimately degrade aviation safety and security as is evidenced by the reports made by crewmembers through the invaluable ASRS system.

Some recent reports submitted to the NASA Aviation Safety Reporting System (ASRS) show how passenger cell phone use can create situations that escalate into significant conflicts. For example, in one incident<sup>5</sup>, a passenger was told repeatedly by the flight attendant to turn off her cell phone just prior to take off. Following final safety checks and an additional cabin announcement by the flight attendant to turn off all electronic devices, the passenger simply turned to face out the window and continued her call. The

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<sup>3</sup> RTCA, Inc. is a private, not-for-profit corporation that develops consensus-based recommendations regarding communications, navigation, surveillance, and air traffic management (CNS/ATM) system issues. RTCA functions as a Federal Advisory Committee. Its recommendations are used by the Federal Aviation Administration (FAA) as the basis for policy, program, and regulatory decisions and by the private sector as the basis for development, investment and other business decisions.

<sup>4</sup> *Guidance on Allowing Portable Electronic Devices (T-PEDs) on Aircraft*, RTCA DO-294, RTCA, Inc., October 19, 2004, p. 85, sec. 8, Operational Recommendations Considering Human Factors.

<sup>5</sup> NASA ASRS PED Report ACN 486835, from an ASRS website document at [http://asrs.arc.nasa.gov/report\\_sets/ped.pdf](http://asrs.arc.nasa.gov/report_sets/ped.pdf) that was downloaded in 2003

flight attendant responded by leaning over and tapping the passenger on her shoulder; in response, the passenger's male seatmate grabbed the flight attendant's wrist, shouting that she was not to be touched. At this point, the flight attendant involved the captain, who helped bring the situation under control by threatening to return to the gate if they refused to comply. After finally reaching the destination airport, the female passenger was verbally abusive on her way out the door. In the opinion of the reporting flight attendant, cell phone use should not be allowed at any time on the aircraft.

On another flight<sup>6</sup>, the captain encountered a navigation system problem during initial taxi away from the gate area, and responded by pulling off the taxiway and running system checks. Three separate announcements were made to shut off all electronic devices; however, one passenger disregarded the announcements and proceeded to make a call. The passenger behind him noticed this and rang the call button to alert the flight attendant. The passenger shut down the phone when the seriousness of the problem was made clear, and the navigation system cleared up. In a third incident<sup>7</sup>, a passenger continued using his cell phone following the flight attendant announcement prior to take off. This prompted a second passenger to reach across the aisle, tap the caller, and ask that the phone be turned off. The cell phone user's response was to swat the second passenger and begin shouting, an action that brought the flight attendant over to intervene. The first passenger then swatted the flight attendant, which resulted in his removal from the flight. All of these incidents suggest that declaring open season for cell phone users on board aircraft threatens to create an unmanageable situation, undermining authority in the cabin and jeopardizing aviation safety.

As mentioned above, AFA and other individuals and groups have submitted written comments in response to the FCC notice of proposed rulemaking. The level of interest shown by industry, various government agencies and the public has been, frankly, astonishing. To date, over 7,800 comments have been received, with the overwhelming

<sup>6</sup> NASA ASRS PED Report ACN 487546, from an ASRS website document at [http://asrs.arc.nasa.gov/report\\_sets/ped.pdf](http://asrs.arc.nasa.gov/report_sets/ped.pdf) that was downloaded in 2003

<sup>7</sup> NASA ASRS PED Report ACN 497101, from an ASRS website document at [http://asrs.arc.nasa.gov/report\\_sets/ped.pdf](http://asrs.arc.nasa.gov/report_sets/ped.pdf) that was downloaded in 2003



majority strongly favoring a continuation of the existing ban on in-flight cell phone use. This finding is consistent with the results of a national poll of airline passengers, sponsored by AFA and the National Consumers League, which found that 63 percent of air travelers wanted to keep cell phone restrictions in place. The survey, conducted by Lauer Research in March and April, found that sentiment against cell phone use in flight surged to around the 80 percent level when air travelers focused on questions dealing with air rage, emergency communications, possible use by terrorists and pilot reports about interference with navigational equipment. Clearly, air travelers understand that cell phones in the close quarters of a commercial flight would not only compromise their comfort but their safety and security as well.

As expected, public comments in response to the FCC notice have focused on the likelihood that cell phone use in the cramped confines of the airplane cabin would be annoying and divisive. Many flight attendants also weighed in; a substantial number of these were AFA members. Flight attendants tended to agree with the public that cell phone use is an undesirable social irritant and would make the cabin environment, which is already tense, even more difficult to manage. Flight attendants also raised concerns about electromagnetic interference, possible use of cell phones by terrorists, and the compromises to safety and security that would result from being forced to shoulder the added burden of having to enforce new, unprecedented in-flight cell phone policies.

In support of statements from individual flight attendants, the AFA International office also submitted written comments to the FCC.<sup>8</sup> With respect to aviation safety, the AFA comments cite research studies and crew reports that document ongoing concerns within the technical community over the potential for electromagnetic interference with onboard equipment. The comments also describe potential adverse impacts to cabin and flight deck operations, and stress the need for consistent regulation from the FCC and FAA in order to minimize public confusion and thereby reduce the incidence of social frictions

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<sup>8</sup> *Comments of Association of Flight Attendants-CWA, AFL-CIO, In the Matter of Amendment of the Commission's Rules to Facilitate the Use of Cellular Telephones and Other Wireless Devices Aboard Aircraft*, FCC WT Docket No. 04-435, Dated May 26, 2005. Attached, and also available at [http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=6517618073](http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6517618073)

on board. With respect to aviation security, the FCC proposal suggests, with no supporting evidence, that allowing controlled use of cellular handsets and other wireless devices in airborne aircraft would actually protect the public by allowing public safety and homeland security personnel to communicate more effectively in the event of an airborne terrorist attack such as occurred on 9/11. AFA considers this logic to be seriously flawed. One needs only look at how effectively the recent bombings in London were executed. Deadly accurate timing was a key factor. It is our belief that permitting cell phone use while in flight would give terrorists a greater edge in repeating the horrific events of September 11<sup>th</sup>. In fact, law enforcement experts, in off-the-record oral comments, have advised us that allowing the general public to use personal cell phones on airborne aircraft could actually facilitate terrorist activities. This is really just common sense, since lifting the ban on cell phone use on airplanes would make it easier for terrorists to communicate with each other to coordinate a successful attack or defer an attack until conditions are more favorable. On the other hand, the events of September 11, 2001, show that despite the ban on in-flight cell phone use, once an onboard attack or other emergency commences, emergency personnel as well as passengers will use their cell phones to communicate with the ground.

Additional strong support for the AFA position on aviation security is contained within comments submitted to the FCC by the U.S. Departments of Justice (DoJ) and Homeland Security and the Federal Bureau of Investigation. Quoting from these DOJ comments<sup>9</sup>: “The uniqueness of service to and from an aircraft in flight presents the possibility that terrorists and other criminals could use air-to-ground communications systems to coordinate an attack ... For example, the use of personal wireless telephones onboard aircraft could potentially facilitate a coordinated attack between (1) a person on the aircraft and a person on the ground, (2) persons traveling on different aircraft, and/or (3) persons traveling on the same aircraft located in different sections of the cabin, who

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<sup>9</sup> *Comments of the Department of Justice, Including the Federal Bureau of Investigation, and the Department of Homeland Security, In the Matter of Amendment of the Commission's Rules to Facilitate the Use of Cellular Telephones and Other Wireless Devices Aboard Aircraft*, FCC WT Docket No. 04-435, Dated May 26, 2005. Available at [http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=6517617789](http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6517617789)

could communicate with one another using their personal wireless telephones.”<sup>10</sup> A footnote to the DOJ comments, paraphrasing the 9/11 Commission Report, states that “the hijackers/terrorists involved in the September 11, 2001, attacks utilized existing telecommunications options from within the terminals at Boston’s Logan Airport to communicate and coordinate the planned attacks. ... [W]hile checking in for American Airlines Flight 11, hijacker Mohammed Atta reportedly received a call on his cell phone from fellow hijacker Marwan al Shehhi, which was placed by Shehhi from a payphone located in Terminal C of Logan Airport between the screening checkpoint and the boarding gate for United Airlines Flight 175. ... Although the communications were effectuated on the ground using existing communications facilities, it is not difficult to conclude what additional/further coordination could have occurred if other options – such as in-flight cell phone use – had been available.”<sup>11</sup> Given this potential for adverse effects on aviation security, as well as other national security concerns, the DOJ concludes that “the Commission’s inquiry into the appropriateness of lifting its current ban on in-flight personal wireless telephone use must consider public safety/national security ... by expressly including an analysis of the potential adverse impact that the Commission’s proposal and resulting actions could have on public safety and national security.”<sup>12</sup>

In conclusion, given all of the concerns raised above, and returning to the question posed by the title of this hearing, the Association of Flight Attendants categorically rejects the notion that cell phone use on aircraft is a necessity. Moreover, it is our position that in far too many operational scenarios, cell phone use could be far worse than a mere nuisance, with potentially catastrophic effects on aviation safety and security. Therefore, we urge this Subcommittee and all of Congress to work with the FCC, FAA and other government agencies to ensure that existing bans on the use of cell phones onboard commercial airplanes in flight are kept in place.

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<sup>10</sup> Ibid., p. 9.

<sup>11</sup> Ibid., p. 9.

<sup>12</sup> Ibid., p. 3.

AFA's attached comments to the FCC outline our concerns in much more detail than I am able to convey to you in today's hearing. I ask that you examine this informative document and contact AFA should greater clarification be necessary. I am happy to answer any questions regarding my testimony.

ATTACHMENT

Comments of  
Association of Flight Attendants-CWA, AFL-CIO  
Dated May 26, 2005

In the Matter of:  
Amendment of the Commission's Rules to Facilitate the Use of Cellular Telephones and  
Other Wireless Devices Aboard Aircraft  
FCC WT Docket No. 04-435

Also available electronically at  
[http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=6517618073](http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6517618073)

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

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| In the Matter of                                | ) |                      |
|   | ) |                      |
| Amendment of the Commission's Rules to          | ) | WT Docket No. 04-435 |
| Facilitate the Use of Cellular Telephones and   | ) |                      |
| Other Wireless Devices Aboard Airborne Aircraft | ) |                      |

**Comments of  
Association of Flight Attendants-CWA, AFL-CIO**

The Association of Flight Attendants-CWA, AFL-CIO ("AFA") hereby submits these comments in response to the Federal Communications Commission ("FCC" or "Commission") Notice of Proposed Rulemaking ("NPRM") on the use of cellular telephones on airborne aircraft.<sup>13</sup> AFA is the world's largest flight attendant union with 46,000 members at 22 airlines.

The FCC and the Federal Aviation Administration ("FAA") should maintain their respective bans on the use of cellular telephones on airborne aircraft to protect public safety and passenger privacy. The scientific community has yet to reach any definite conclusion on the amount of interference with navigational and other electronic equipment generated by cell phones on airplanes. The FAA has commissioned a study on the issue by a special committee of RTCA, Inc. ("RTCA", formerly the Radio Technical Commission on Aeronautics); the final report is not due until the end of 2006.

According to polls, the public has indicated its overwhelming support, by a 2 to 1 majority, for the current policy barring cell phone use on airplanes. Moreover, the Commission has already received more than 7,400 comments in this proceeding, the vast majority of which

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<sup>13</sup> *Amendment of the Commission's Rules to Facilitate the Use of Cellular Telephones and Other Wireless Devices Aboard Airborne Aircraft*, WT Docket No. 04-435, Notice of Proposed Rulemaking, FCC 04-288 (released Feb. 15, 2005) ("NPRM").

oppose lifting the ban. The comments are largely from individuals who do not want to sit next to someone yelling into their cell phone during a flight. Unlike a passenger rail operator, an airline cannot designate a “quiet car” in the enclosed space of an airplane. In these times of long lines and frazzled nerves from heightened security and flight delays, conflicts between passengers over cell phone use could quickly move from annoyance to full-scale rage. Flight attendants will be caught in the middle of these conflicts. Extreme situations require returning to the gate to remove an unruly passenger, inconveniencing all other passengers. In addition, passengers busy talking on their cell phones are more likely to miss important security and emergency announcements. Any relaxation of cell phone usage restrictions will only lead to an increase in such incidents; therefore, to protect public safety and privacy, the Commission should maintain its ban on cellular telephones on airplanes.

Our comments concentrate on four subjects of particular relevance to airline flight attendants: 1) cellular telephones and electromagnetic interference; 2) homeland security and emergency responder communications; 3) operational disruptions in the airline cabin; and 4) the need for consistent regulation.

#### Cellular Telephones and Electromagnetic Interference

There is a general consensus within the technical community that cellular telephones are capable of producing radio signals that can interfere with an aircraft’s communications, navigation, and other critical electronic systems, thus threatening public safety. The RTCA Special Committee 202 was tasked by the FAA to study the effects on aircraft systems of electromagnetic interference (“EMI”) of emissions from portable electronic devices (“PED”) such as cell phones or other wireless handsets. Based on a review of all relevant technical studies

and user reports, the Special Committee of the RTCA concluded last year that “all [studies] suggest that aircraft EMI susceptibility does exist in transport-category aircraft.”<sup>14</sup> In 2001, the National Aeronautics and Space Administration (“NASA”) reached a similar conclusion, noting that “PED related anomalies have happened in aircraft with advanced cockpits, and they have happened at less than desirable moments...when flight crews were already busy with the multiple tasks involved in landing or taking off.”<sup>15</sup> According to the NASA report, about 44 percent of all cell phone interference incidents occurred during a critical phase of flight, such as takeoff/climb and approach/landing. Finally, the Civil Aviation Authority of the United Kingdom reported in 2003 that “tests that exposed a set of aircraft avionic equipment to simulated cellphone transmissions revealed various adverse effects on the equipment performance” with the recommendation that the test results “endorse current policy that restricts the use of cellphones in aircraft.”<sup>16</sup>

Crew member reports submitted to the NASA Aviation Safety Reporting System (“ASRS”) detail numerous instances in which cellular telephone use was suspected of causing navigational and communications problems. These reports vividly illustrate the potential for serious problems related to in-flight use of cellular phones. In one case, the autopilot on a DC-9 commercial flight made an uncommanded turn while the plane was cruising, but resumed normal operation after the captain asked passengers to turn off electronic devices. The apparent cause of the problem was reported to be a cellular phone that went off in an overhead bin at the time of

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<sup>14</sup> *Guidance on Allowing Portable Electronic Devices (T-PEDs) on Aircraft*, RTCA DO-294, RTCA, Inc., October 19, 2004, p. 45, sec. 6.1.2, The Reality of Susceptibility.

<sup>15</sup> *Personal Electronic Devices and Their Interference with Aircraft Systems*, NASA/CR-2001-210866, June 2001, pp. 11-12.

<sup>16</sup> *Effects of Interference from Cellular Telephones on Aircraft Avionic Equipment*, CAA Paper 2003/3, UK Civil Aviation Authority Safety Regulation Group, April 30, 2003 (available in electronic format at [www.caa.co.uk/publications](http://www.caa.co.uk/publications)), Executive Summary.



the autopilot problem. In another case, a B767-300 aircraft received conflicting navigational directions to “fly down” and “fly up” as it prepared to land. Two passengers were using cellular phones at the time of the problem. In a third case, a B737-300 aircraft had to ask for a second approach when faulty navigation readings sent the aircraft off-course during descent. Flight attendants reported that a woman in the forward area had been talking on her cell phone during the incident and that the navigation problems stopped as soon as she turned off her phone. (See Appendix for reports from NASA ASRS database that detail cell phone interference problems.)

The FCC banned the airborne use of cellular phones and cellular equipment on private and commercial aircraft in 1991 in order to guard against “harmful interference from airborne use of cellular phones to terrestrial cellular networks.”<sup>17</sup> Now, the FCC proposes to mitigate such interference with the use of “pico cell” technology. Airborne “pico cells” are “low power cellular base stations installed in the aircraft for the purpose of communicating with (and controlling the operations of) cellular handsets or other cellular devices.” A pico cell is analogous to an in-building wireless system for use in the aircraft. The cellular signal travels from the cellular handset to the pico cell, which then relays the call to the ground via a separate air-to-ground link...<sup>18</sup> The FCC explains that “the airborne pico cell would minimize handset power levels by instructing handsets to operate at their lowest power setting. In contrast, without a ready pico cell on the aircraft, airborne handsets would normally operate at their highest power setting in an attempt to reach base stations located far away on the ground, potentially causing interference to terrestrial cellular networks.”<sup>19</sup>

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<sup>17</sup> NPRM, paragraph 6.

<sup>18</sup> NPRM, paragraph 13.

<sup>19</sup> NPRM paragraph 14

In the commercial airline business, where small failures of critical systems can lead to major catastrophes and large loss of life, pico cell technology that has been thoroughly tested and certified for fault-tolerant operation is probably years away from commercial availability.<sup>20</sup> With this NPRM, the Commission seeks comment from industry stakeholders to help resolve several pico cell technology and implementation issues; these questions help to highlight many of the obstacles that the regulators and industries would still have to clear before workable solutions may become available. While AFA believes most emphatically that cellular telephone use should continue to be banned on airborne commercial flights for the operational and security reasons cited above, we realize that pico cell and other technological solutions are being developed. Therefore, to register our concerns with respect to these developing technologies, we are submitting the table below, which lists our responses to the NPRM requests for comment that have a potentially significant effect on airline crew member operations.

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<sup>20</sup> Various means by which manufacturers may navigate the complex aircraft equipment certification process are described in the following 117 page document: *The FAA and Industry Guide to Product Certification, 2<sup>nd</sup> Edition*, prepared by the Aerospace Industries Association, the General Aviation Manufacturer's Association, and the Federal Aviation Administration Aircraft Certification Service, Sept. 2004, [http://www.faa.gov/certification/aircraft/av-info/dst/CPI\\_guide\\_II.pdf](http://www.faa.gov/certification/aircraft/av-info/dst/CPI_guide_II.pdf)

## AFA Comments to FCC WT 04-435

Table. FCC Requests for Comment on Pico Cell Issues that Affect Airline Crews, with AFA Responses

| FCC Request for Comment   | AFA Response  |
|---|---|
| Would the FCC “need to mandate that the pico cell cover a specific set of technologies so that all handsets on board aircraft are controlled by the pico cell”? <sup>21</sup>   | It will be nearly impossible, based purely on the physical appearance of consumer devices and given practical training and time constraints, for crew members to differentiate between numerous, similar cellular telephone technology types. Thus, although “foreign” cellular telephones may not interfere with “domestic” terrestrial networks, it will be necessary for onboard pico cells to control all (worldwide) cellular telephone technologies in order to protect avionics, navigation and other critical airplane systems. Whether or not this is mandated by the FCC, we would certainly expect (and demand) that the FAA mandate pico cell control of all cellular telephone devices that may be brought on board an airborne aircraft.  |
| Should the FCC “adopt technical rules regarding the onboard operation of pico cells ... [f]or example, if an airborne pico cell were to fail, how should [FCC] regulations address the risk of airborne cell phones beginning to search for a terrestrial base station and transmitting at maximum power?” <sup>22</sup>  | The FCC should adopt technical standards that regulate all aspects of pico cell technology, installation, maintenance and operations, insofar as these standards address the risk of pico cell failure leading to the potential for interference with terrestrial networks. Furthermore, the FAA should adopt parallel standards that minimize below an acceptable level the risk posed by electromagnetic interference with airplane systems electronic systems and crew operations.   |
| Should the FCC proposal “apply only to handsets operating on 800 MHz cellular spectrum ... or [should] any restrictions [the FCC] adopt[s] ... be expanded to include handsets and devices operating on [other] spectrum bands. ... [and should the FCC] prohibition on airborne cellular use ... be replaced by an industry-developed standard that would guard against harmful interference to airborne and terrestrial systems through appropriate technical and operational limitations”? <sup>23</sup> | The first part of this question was covered above; whether the FCC proposal includes all devices and all spectrum bands is moot, as the FAA should find this necessary to guarantee no harmful interference to airplane systems. As to the second part of the question, we are not sure what is meant by an “industry-developed standard.” If these are simply “best practices” guidelines or recommendations, then we feel strongly that such “industry standards” will be insufficient to guarantee appropriate levels of safety for the traveling public. Legally-binding, regulatory standards are the only acceptable “standards” that can provide the levels of safety demanded in the commercial airline world. We would expect that the FAA will be instrumental in developing, implementing and enforcing the standards necessary to prevent harmful interference to airborne systems. |

<sup>21</sup> NPRM, paragraph 15.<sup>22</sup> NPRM, paragraph 16.<sup>23</sup> NPRM, paragraph 4.

Homeland Security and Emergency Responder Communications

In the NPRM, the FCC argues that allowing controlled use of cellular handsets and other wireless devices in airborne aircraft would protect the public by allowing public safety and homeland security personnel to communicate more effectively in the event of an airborne terrorist attack such as occurred on September 11, 2001.<sup>24</sup> The FCC logic is seriously flawed. In fact, law enforcement experts have advised the AFA what common sense would tell us: allowing the use of cellular telephones on airborne aircraft could actually *facilitate* terrorist activities.<sup>25</sup> Lifting the ban on cell phone use on airplanes would make it easier for terrorists to communicate with each other to coordinate a successful attack or defer an attack until conditions were more favorable.

On the other hand, even with the current ban, once an onboard attack or other emergency commences, emergency personnel as well as passengers do not hesitate to use their cell phones to communicate. That is what happened on September 11, 2001, as those of us who listened to the heroic and heart-wrenching cell phone messages of that day know all too well. The FCC does not need to lift the cell phone ban to encourage law-abiding passengers and law enforcement personnel to use their cell phones in an emergency situation. However, allowing unrestricted cell phone use on airplanes *will* facilitate communication by those who seek to harm innocent people by making it easier for them to coordinate terrorist activity.

Operational Disruptions in the Airline Cabin

For commercial airline flight attendants, cellular telephone use aboard airplanes would create serious operational disruptions that would affect the safety and privacy of passengers. The

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<sup>24</sup> NPRM, paragraph 2.

<sup>25</sup> Confidential communications from a former law enforcement officer and a former federal agent.

ASRS reports provided in the Appendix show vividly how cellular telephone use on board airplanes can lead to uncomfortable or even dangerous situations. In one recent case, a passenger threatened to tear out all the hair of a flight attendant who instructed him to turn off his cellular phone after three public announcements to turn off all phones. The aircraft was forced to return to the gate and the man was removed from the plane for harassing a crew member. In another case, a passenger who refused to turn off his phone first used a newspaper to hit another passenger who urged him to comply. The man then screamed and hit a flight attendant who tried to calm him down. The offending passenger was finally removed from the flight. In a third case, a passenger yelled profanity into his phone, and only turned it off after receiving multiple requests to comply. Later, the same passenger was found to be talking on a second cellular phone. The passenger was removed from the plane after he became belligerent and verbally aggressive.

Allowing airborne use of cellular telephones is a prescription for bedlam in the skies. The number one responsibility of flight attendants is to ensure passenger safety. Gaining the attention of passengers in an emergency such as an evacuation is a top concern. In such situations, crew members fear that rampant cell phone use will lead to chaos. As one flight attendant wrote: “(imagine) trying to pass on important information that will save lives, yet we are competing for the attention of passengers (on their phones)...”

Many flight attendants submitted comments to the Commission in this proceeding, strongly urging the FCC to retain the cell phone ban in the interest of public safety. Here is a sampling of their comments:

## AFA Comments to FCC WT 04-435

- “I have seen... fist fights because one passenger puts his seat back and the passenger behind him wants to read his newspaper. Can you imagine what would happen when 300 people are gabbing away [on cell phones]?”<sup>26</sup>
- “Harried travelers would go over the edge listening to the noise.”
- “I read incident reports where passenger became disruptive because the flight is 10 minutes late, or the right type of beverage is not offered, or a multitude of other small reasons. I think that cell phones will be just another trigger for these types of events.”

More than 7,400 members of the public have already submitted comments to the Commission in support of retaining the current ban on cell phones on airplanes. They, too, urge the Commission to preserve the ban on cell phone use on airplanes:

- “I can see fights starting over this.”
- “Imagine yourself on the airplane with a sitting partner screaming in the cell phone the entire trip.”

Air travelers want the Commission to continue its ban on cell phone use on airplanes. A survey of 702 air passengers conducted by Lauer Research Inc. in March and April, 2005 found that 63 percent of those polled wanted to keep cellular phone restrictions in place. Further, the survey found that 78 percent of respondents believe that cell phone use could lead to increased passenger unruliness and interfere with flight attendants’ ability to maintain order. An equal share feels that cell phones might distract passengers from hearing life-saving instructions in an emergency. Fully 84 percent agree it is too soon to lift the ban while the FAA is still studying whether cell phones interfere with aircraft systems. Likewise, a USA Today/CNN/Gallup poll released in January found that nearly 70 percent of frequent or occasional fliers wanted to see the

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<sup>26</sup> Personal communication to AFA from flight attendant at major U.S. carrier.

ban on in-flight cellular phone use maintained.<sup>27</sup> For the above reasons, the use of cell phones on airborne aircraft is clearly not in the public interest.

#### The Need for Consistent Regulation

In the NPRM, the Commission notes that the public need not fear any FCC relaxation of the rules, since the FAA and aircraft operators retain final authority over the use of portable electronic devices such as cell phones and other wireless handsets on airplanes.<sup>28</sup> While this is true, the simple fact is that any change adopted by the FCC can and will affect public perception. Thus, simply relaxing the rules to allow the *possibility* of cellular telephone use on airborne aircraft is likely to result in increased levels of unacceptable, unauthorized use by some relatively uninformed members of the traveling public. If the FCC ban is lifted or relaxed, many passengers hearing the news might mistakenly assume that placing calls using their personal devices during flights is acceptable, despite crew instructions to the contrary. Such situations will inevitably lead to conflicts with crew members and other passengers, and result in compromised operational safety and security on many flights. Crew members are understandably concerned about the possibility of acceptance by *any* regulatory authority, including the FCC, for the airborne use of cellular telephones.

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<sup>27</sup> *Most travelers want to keep in-flight cellphone ban; 68% of regular fliers say silence is golden*; Barbara De Lollis, USA TODAY, January 13, 2005, pg. A.1. Summarized results from a USA Today/CNN/Gallup poll, which found that nearly 70 percent of frequent or occasional fliers want to maintain the in-flight cellular telephone ban.

<sup>28</sup> NPRM, paragraph 3.

Conclusion

The FCC should maintain its existing ban on the airborne use of cellular telephones, sending a strong, consistent signal to the public that such use threatens airline passenger safety and privacy. In addition, lifting the ban could make it easier for terrorists to coordinate an airborne attack. Finally, the public as well as airline crews overwhelmingly support the current ban on cell phone use on airplanes to protect privacy, maintain civility, and ensure aviation safety and security.

Respectfully submitted,

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Dated: May 26, 2005



AFA Comments to FCC WT 04-435

APPENDIX

Selected NASA ASRS PED Reports

Seventeen reports were obtained in 2003 from the ASRS website document  
[http://asrs.arc.nasa.gov/report\\_sets/ped.pdf](http://asrs.arc.nasa.gov/report_sets/ped.pdf)

Update Number.....9.0  
Date of Update .....October 9, 2003

In the narrative and synopsis for each of these reports, the words “CELL PHONE”, “CELL PHONES”, “CELLULAR PHONE” and “CELLULAR PHONES” have been highlighted in bold to assist visual scanning of the text.

**ACN: 486835** (Appendix Report 1 of 17)**Time**

Date : 200008

Day : Mon

Local Time Of Day : 1801 To 2400

**Place**

State Reference : FL

**Aircraft / 1**

Controlling Facilities.Tower : MIA.Tower

Operator.Common Carrier : Air Carrier

Make Model : MD-80 Series (DC-9-80) Undifferentiated or Other Model

Mission : Passenger

**Person / 1**

ASRS Report : 486835

**Person / 2**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Passenger Human Performance

**Narrative :**

PAX YY HAD BEEN TOLD REPEATEDLY SINCE WE LEFT THE GATE TO TURN OFF HER CELL PHONE, END HER CALL. SHE IGNORED ALL REQUESTS. ON FINAL SAFETY CHKS THAT WERE BEING REPEATED BEFORE TKOF BECAUSE OF A 2 HR TSTM DELAY, SHE WAS ON HER CELL PHONE AGAIN. I TOLD HER TO TURN IT OFF FOR THE 5TH TIME, AND I MADE ANOTHER CEASE THE USE OF ELECTRONIC DEVICES PA. SHE IGNORED MY REQUEST PRETENDING NOT TO HEAR ME AND TUCKED THE PHONE BTWN HER SHOULDER AND EAR AND TURNED HER BACK TO ME FACING OUT THE WINDOW. NOT REALIZING THAT SHE WAS TRAVELING WITH ANYONE I LEANED ACROSS THE SEATS (SHE WAS SEATED AT THE WINDOW IN AN EXIT ROW) TO TAP HER ON THE SHOULDER SO I COULD GET HER ATTN AND LET HER KNOW THAT I WAS TALKING TO HER. AS I WENT TO TAP HER SHOULDER, THE MAN SITTING NEXT TO HER, MR XX, GRABBED MY ARM IN A FIRM GRIP AND JERKED ME AWAY FROM MS YY SHOUTING THAT I WAS NOT TO TOUCH HER. THEY WOULD SUE MY AIRLINES IF I TOUCHED HER. THEY WERE MAKING ARRANGEMENTS TO BE PICKED UP IN WASHINGTON AND TO LEAVE THEM ALONE. A SHOUTING MATCH ENSUED IN WHICH I FIRMLY TOLD MR XX TO LET GO OF MY ARM AND I TOLD MS YY TO PUT THE CELL PHONE AWAY NOW. SHE CONTINUED TO TALK. I WENT TO INFORM THE CAPT OF THE SIT. THE CAPT PULLED OUT OF THE TKOF LINE/SEQUENCE TO ASSESS THE SIT AND CONSIDER PAX REMOVAL BEFORE WE TOOK OFF. HE SENT ME BACK TO TELL THE COUPLE THAT IF THEY CONTINUED NOT TO COOPERATE/COMPLY WITH FLT ATTENDANT INSTRUCTIONS, WE WOULD RETURN TO THE GATE AND HAVE THEM REMOVED AND, FURTHERMORE, IF WE HAD ANY MORE TROUBLE OUT OF THEM, WE WOULD LAND IN RTE AND HAVE THEM REMOVED. THEY QUIETED DOWN. IN COORD WITH THE CAPT, WE MUTUALLY AGREED THAT THE SIT WAS UNDER CTL AND DECIDED NOT TO INCONVENIENCE THE REST OF THE PAX BY GOING BACK TO THE GATE TO HAVE THEM REMOVED. THE FLT CONTINUED WITHOUT INCIDENT. AS MS YY DEPLANED, SHE PLEASANTLY GAVE ME 'THE FINGER' AND SHOUTED "&^% YOU" TO ME AS SHE WALKED UP THE JETBRIDGE. IN MY OPINION, CELL PHONES SHOULD NOT BE ALLOWED FOR USE ON BOARD THE ACFT AT ANY TIME.

**Synopsis :**

CABIN ATTENDANT RPT, S80, MIA-DCA: WOMAN REFUSED TO QUIT USING CELL PHONE ON TAXI. CAPT PULLED OUT OF TKOF SEQUENCE TO THREATEN TO REMOVE HER AND COMPANION.

**ACN: 486935** (*Appendix Report 2 of 17*)**Time**

Date : 200009

Day : Fri

Local Time Of Day : 0601 To 1200

**Place**

Locale Reference.Airport : JFK.Airport

State Reference : NY

**Aircraft / 1**

Operator.Common Carrier : Air Carrier

Make Model : B767 Undifferentiated or Other Model

Mission : Passenger

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

ASRS Report : 486935

**Person / 2**

Function.Oversight : Flight Attendant In Charge

**Person / 5**

Function.Flight Crew : First Officer

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Passenger Human Performance

**Narrative :**

THE PURSER RPTED A PAX REFUSED TO CEASE USING AND NOT TURNING OFF **CELLULAR PHONE** DURING TAXI OUT. THE PAX COMPLIED ON THE 4TH ADMONISHMENT FROM A FLT ATTENDANT. A DISTURBANCE RPT WAS COMPLETED.

**Synopsis :**

PLT RPT, B767 JFK-SFO. PAX REFUSED TO TURN OFF **CELL PHONE** ON TAXI OUT. PAX FINALLY COMPLIED AFTER RECEIVING WRITTEN WARNING.

**ACN: 487546** (Appendix Report 3 of 17)**Time**

Date : 200009

Day : Thu

Local Time Of Day : 1201 To 1800

**Place**

State Reference : NY

**Aircraft / 1**

Controlling Facilities.Tower : JFK.Tower

Operator.Common Carrier : Air Carrier

Make Model : B767-200

Mission : Passenger

**Person / 1**

ASRS Report : 487546

**Person / 2**

Function.Oversight : Flight Attendant In Charge

**Person / 3**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

Resolatory Action.None Taken : Detected After The Fact

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Cabin Crew Human Performance

Problem Areas : Flight Crew Human Performance

Problem Areas : Passenger Human Performance

**Narrative :**

WE HAD A NAV PROB AND THE PLTS WERE TESTING THE SYS. FLT ATTENDANT #1 AND THE CAPT MADE PAX'S TO TURN OFF ALL CELL PHONES AND THIS PAX DISREGARDED THIS AND MADE A CALL. THE PAX BEHIND HIM RANG HIS CALL BUTTON AND POINTED IT OUT TO ME. HE HUNG UP WHEN HE SAW ME. SINCE THE CELL PHONE COULD HAVE MESSED UP THE NAV TESTING, IT WAS A POTENTIAL DANGEROUS SIT. CALLBACK CONVERSATION WITH RPTR REVEALED THE FOLLOWING INFO: THE RPTR STATED THAT THEY WERE JUST STARTING TO TAXI AWAY FROM THE GATE WHEN THE PLTS STARTED HAVING NAV PROBS, SO THEY PULLED OFF THE TXWY TO REVIEW THE SYS AND CHKLIST. THE CAPT AND THE PURSER REQUESTED 3 DIFFERENT TIMES FOR PAX TO TURN OFF THEIR CELL PHONES. WHEN NOTIFIED OF THE MAN'S CONTINUING USE OF HIS CELL PHONE, THE PURSER TALKED TO HIM AND EVENTUALLY SCARED HIM. AT FIRST HE WAS SNOTTY TO HER AND THEN HE REALIZED THE SERIOUSNESS OF THE PROB, SO HE BECAME EMBARRASSED AND COMPLIANT. THE PROB WITH THE NAV DID CLR UP, BUT THE RPTR IS NOT CERTAIN WHETHER THE MAN'S CELL PHONE HAD ANYTHING TO DO WITH IT.

**Synopsis :**

CABIN ATTENDANT RPT, B767-200, JFK-SFO, NAV PROB, PULLED OFF TXWY. PAX ASKED TO TURN OFF CELL PHONES, MAN WOULDN'T COMPLY. PURSER WARNED HIM.

**ACN: 488597** (*Appendix Report 4 of 17*)**Time**

Date : 200009

Day : Thu

Local Time Of Day : 0601 To 1200

**Place**

Locale Reference.Airport : LGA.Airport

State Reference : NY

**Environment**

Flight Conditions : VMC

**Aircraft / 1**

Controlling Facilities.ARTCC : ZNY.ARTCC

Operator.Common Carrier : Air Carrier

Make Model : B737-300

Mission : Passenger

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 14000

Experience.Flight Time.Last 90 Days : 200

ASRS Report : 488597

**Person / 2**

Function.Flight Crew : First Officer

**Person / 4**

Function.Controller : Radar

**Person / 3**

Function.Oversight : Flight Attendant In Charge

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Independent Detector.Other.Flight CrewA : 1

Resolatory Action.Flight Crew : Overcame Equipment Problem

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Flight Crew Human Performance

Problem Areas : Passenger Human Performance

**Narrative :**

DEPARTED LGA ON VECTORS N THEN W. COMS ON THE FIRST ZNY FREQ W OF LGA THERE WAS A LOUD BUZZ. COM WAS POSSIBLE BUT DIFFICULT. AS THERE HAD BEEN ABOUT A 1 HR TAXI OUT OF LGA I ASKED THE FLT ATTENDANT TO CHK FOR CELL PHONES OR OTHER DEVICES. THEY FOUND 5 CELL PHONES ON. THE PHONES WERE TURNED 'OFF' AND THE NOISE DISAPPEARED.

**Synopsis :**

PAX ELECTRONIC DEVICES SUSPECTED OF CAUSING COM RADIO PROBS ON A B737-300.

**ACN: 492968** (Appendix Report 5 of 17)**Time**

Date : 200011

Day : Wed

Local Time Of Day : 0601 To 1200

**Place**

State Reference : FL

**Environment**

Ceiling : CLR

**Aircraft / 1**

Controlling Facilities.Tower : MIA.Tower

Operator.Common Carrier : Air Carrier

Make Model : MD-80 Super 80

Mission : Passenger

**Person / 1**

ASRS Report : 492968

**Person / 2**

Function.Oversight : Flight Attendant In Charge

**Person / 4**

Function.Oversight : Supervisor

**Person / 3**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Cabin Crew Human Performance

Problem Areas : Flight Crew Human Performance

Problem Areas : Passenger Human Performance

**Narrative :**

FOLLOWING ALL REQUIRED PRE-DEP, DEP AND SAFETY DEMONSTRATION ANNOUNCEMENTS AND DEMONSTRATIONS, DURING THE ROUTINE SAFETY COMPLIANCE CHK, THE FLT ATTENDANT #1 NOTICED A PAX STILL ON HIS CELL PHONE AND CORDIALLY REQUESTED THAT HE TURN IT OFF. HE REPLIED, 'NO, WE ARE NOT TAKING OFF YET, AND DON'T TELL ME WHAT TO DO.' FLT ATTENDANT #1 THEN SAID 'A TOTAL OF 3 ANNOUNCEMENTS HAVE NOW BEEN MADE TO LET EVERYONE KNOW THAT CELL PHONES HAVE TO BE TURNED OFF NOW, AND AS A CREW MEMBER, I AM REQUIRED TO MAKE SURE EVERYONE COMPLIES WITH THE INSTRUCTIONS GIVEN.' THE PAX THEN STATED FLT ATTENDANT #1 WAS NOT GOING TO TELL HIM WHAT TO DO AND IF SHE (FLT ATTENDANT #1) TRIED TO ORDER HIM TO DO ANYTHING, HE WOULD PULL ALL HER HAIR OUT. FLT ATTENDANT #1 LEFT AND WENT TO THE CAPT TO RELAY SIT. FLT ATTENDANT #1 WAS VERY BOTHERED AND SHAKING. THE CAPT ASKED HER TO WAIT/THINK FOR 10 MINS. WHETHER SHE (FLT ATTENDANT #1) REALLY WANTED TO HAVE PAX REMOVED OR NOT. FLT ATTENDANT #1 SAID SHE DID NOT NEED TO WAIT 10 MINS. SHE DEFINITELY WANTED HIM (PAX) OR HERSELF REMOVED. THE CAPT SAID HE WOULD RETURN TO THE GATE TO REMOVE HIM FOR HARASSMENT OF CREW MEMBERS. THE CAPT RETURNED, THE PAX WAS REMOVED, THE PAX'S WIFE YELLED AT FLT ATTENDANT #1 AT FORWARD ENTRY DOOR AND WANTED HER NAME, THEN THE PAX'S WIFE GOT OFF THE PLANE AS WELL. UNDERLYING FACTORS: GND STOP ATC HOLD AT GATE FORCED US TO HAVE A DELAYED DEP. THIS PAX AND MANY OTHERS THINK THEY CAN COMPLY WITH SAFETY REGS ON THEIR OWN DISCRETION/TIMEFRAME. THIS CAN BE CHANGED ONLY THROUGH PUBLICIZED PERSONAL PENALTIES. CALLBACK CONVERSATION WITH RPTR REVEALED THE FOLLOWING INFO: THE RPTR STATED THAT SHE WAS THE #2 FLT ATTENDANT AND OVERHEARD THE CONFRONTATIONAL WORDS BTWN THE PURSER AND THE PAX. THEY DID NOT KNOW THAT THE MAN WAS TRAVELING WITH HIS WIFE, BECAUSE THEY WEREN'T SITTING NEXT TO EACH OTHER. THE COUPLE DIDN'T KNOW THAT THEY WERE RETURNING TO THE GATE, UNTIL THE PLANE STOPPED AND THE AGENT WALKED ON AND MADE THEM GET OFF. THE RPTR WAS VERY UPSET WITH THE CAPT AFTER HE HAD TOLD THE PURSER TO WAIT AND CALM DOWN (SHE WAS CRYING AND SHAKING) FOR 10 MINS WHILE THEY WERE STILL TAXIING, BECAUSE THEY COULD HAVE RECEIVED TKOF CLRNC AT ANY TIME AND THEY COULD TAKE OFF WITH THIS PROB MAN STILL ONBOARD.

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SHE ALSO FELT THAT THE CAPT WASN'T SHOWING A LOT OF RESPECT FOR THE FLT ATTENDANT AND FLT ATTENDANTS IN GENERAL. SHE WANTED TO RPT HIM TO THE UNION'S PROFESSIONAL STANDARDS COMMITTEE, BUT THE PURSER TALKED HER OUT OF IT.

Synopsis :

ON TAXI, MAN REFUSED TO TURN OFF CELL PHONE, PHYSICALLY THREATENED PURSER. PURSER HAD CAPT RETURN TO GATE AND REMOVE PAX.

**ACN: 495128** (Appendix Report 6 of 17)**Time**

Date : 200012

Day : Thu

Local Time Of Day : 1201 To 1800

**Place**

State Reference : GA

Altitude.MSL. Single Value : 35000

**Environment**

Flight Conditions : VMC

**Aircraft / 1**

Controlling Facilities.ARTCC : ZTL.ARTCC

Operator.Common Carrier : Air Carrier

Make Model : B737 Undifferentiated or Other Model

Mission : Passenger

Flight Phase.Cruise : Level

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 13000

Experience.Flight Time.Last 90 Days : 250

Experience.Flight Time.Type : 8500

ASRS Report : 495128

**Person / 2**

Function.Flight Crew : First Officer

**Person / 3**

Function.Oversight : Flight Attendant In Charge

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Independent Detector.Aircraft Equipment.Other Aircraft Equipment : ACARS

Independent Detector.Other.Flight CrewA : 1

Resolatory Action.None Taken : Detected After The Fact

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Passenger Human Performance

**Narrative :**

OUR DISPATCH USES A SELECTIVE CALLING SYS. THE SYS USES 2 DISTINCTIVE RINGING METHODS -- ONE FOR SPECIFIC ACFT, THE OTHER FOR ALL ACFT ON FREQ. OUR CALL BEGAN AS A SERIES OF IRREGULAR FREQS AND LENGTH 'CHIRPS'. WE TRIED TO RECEIVE COMPANY DISPATCH ON THE 2 CLOSEST FREQS TO OUR PATHWAY -- NO LUCK. FINALLY ACHIEVED PATCH THROUGH JACKSONVILLE COUNTY STATION. DISPATCH WAS NOT TRYING TO CALL US. I ASKED 'A' FLT ATTENDANT TO RPT ALL PED'S IN USE IN CABIN. HE RPTED NO COMPUTERS OR OTHER ENTERTAINMENT AIDS IN USE, BUT THAT WHEN HE QUESTIONED A MAN WHO WAS STOWING HIS CELL PHONE (IT WAS OFF) A PAX IN THE NEXT ROW ADMITTED THAT HIS WAS ON AND HE HAD JUST RECEIVED A VOICE MAIL. HE THEN TURNED IT OFF. WE HAD NO FURTHER ANOMALIES. SUSPECT ELECTRONIC INTERFERENCE FROM CELL PHONE.

**Synopsis :**

PED RPTED TO CAUSE PROBS WITH COM RADIO ACARS SYS.



**ACN: 497101** (*Appendix Report 7 of 17*)**Time**

Date : 200012

Day : Thu

Local Time Of Day : 1201 To 1800

**Place**

Locale Reference.Airport : LGA.Airport

State Reference : NY

**Environment**

Ceiling : CLR

**Aircraft / 1**

Operator.Common Carrier : Air Carrier

Make Model : B757 Undifferentiated or Other Model

Mission : Passenger

**Person / 1**

ASRS Report : 497101

**Person / 2**

Function.Oversight : Flight Attendant In Charge

**Person / 3**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Passenger Human Performance

**Narrative :**

PAX X WAS USING HIS CELL PHONE AT DEP TIME AFTER REPEATED PA'S BY THE #1 FLT ATTENDANT AND THE CAPT. HE WAS SEATED IN XC. A PAX IN YD REACHED ACROSS THE AISLE AND TAPPED MR X AND TOLD HIM TO TURN OFF HIS PHONE, THEN TURNED TO THE FLT ATTENDANTS IN THE AFT GALLEY AREA AND TOLD US THAT X WAS ON HIS PHONE. MR X THEN TURNED AND SWATTED YD WITH HIS NEWSPAPER AND YELLED THAT NO ONE SHOULD BE TOUCHING HIM. HE KEPT SWATTING YD UNTIL I STEPPED IN, STOPPED HIM AND ASKED HIM TO CALM DOWN AND EXPLAIN TO ME WHAT HAD HAPPENED. MR X CLAIMED THAT YD PUSHED HIM. HE THEN BEGAN SWATTING HIS NEWSPAPER AT ME AND SCREAMING AT ME THAT NO ONE SHOULD BE TOUCHING HIM. I TOLD HIM THAT HIS BEHAVIOR WAS INAPPROPRIATE AND THAT HE COULDN'T HIT AND YELL AT PEOPLE. THE COCKPIT WAS INFORMED OF THE SIT AND AGREED AFTER SPEAKING WITH MR X THAT HE SHOULD NOT BE PERMITTED TO STAY ON THE ACFT. WE DIDN'T WANT AN UNSTABLE, TYRANNICAL PAX, IF IT WAS AT ALL PREVENTABLE.

**Synopsis :**

CABIN ATTENDANT RPT, B757, LGA-MIA. BOARDING, PAX WOULD NOT TURN OFF CELL PHONE, SWATTED ANOTHER PAX AND CABIN ATTENDANT WITH NEWSPAPER. CAPT INTERVENTION. PAX REMOVED.

**ACN: 504194** (Appendix Report 8 of 17)**Time**

Date : 200103

Day : Sun

Local Time Of Day : 1801 To 2400

**Place**

Locale Reference.Airport : GRR.Airport

State Reference : MI

Altitude.MSL.Single Value : 31000

**Environment**

Flight Conditions : VMC

**Aircraft / 1**

Controlling Facilities.ARTCC : ZAU.ARTCC

Operator.Common Carrier : Air Carrier

Make Model : DC-9 50

Mission : Passenger

Flight Phase.Cruise : Level

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 18000

Experience.Flight Time.Last 90 Days : 200

Experience.Flight Time.Type : 9000

ASRS Report : 504194

**Person / 2**

Function.Flight Crew : First Officer

**Person / 5**

Function.Controller : Radar

**Person / 3**

Function.Oversight : Flight Attendant In Charge

**Events**

Anomaly.Non Adherence : Clearance

Independent Detector.Aircraft Equipment.Other Aircraft Equipment : Autoplt reaction

Resolatory Action.Flight Crew : Returned To Intended or Assigned Course

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Passenger Human Performance

**Narrative :**

WHILE AT CRUISE AT FL310, THE AUTOPLT MADE AN UNCOMMANDED TURN OF 15 DEGS AT 1/2 STANDARD RATE, AUTOPLT IN TURN RATE MODE. HDG SELECT SWITCH OFF, VOR/LOC TRACK NOT ENGAGED WITH BOTH RMI'S AGREEING BEFORE AND AFTER THE TURN. THE AUTOPLT CONTINUED TO FUNCTION NORMALLY FOR THE REST OF THE FLT. I ASKED THE LEAD FLT ATTENDANT AT THE TIME TO DO A PED WALK. SHE RETURNED TO SAY THAT SEVERAL USUAL TYPE OF PED'S WERE IN USE. I MADE A PA ASKING THAT PED'S BE DEPWRED AND WE COMPLETED THE FLT UNEVENTFULLY. I SUBSEQUENTLY LEARNED FROM THE LEAD FLT ATTENDANT THAT HER HUSBAND (WHO WAS A PAX ON THIS FLT) RPTED TO HER THAT HE HEARD A CELL PHONE RINGING IN AN OVERHEAD BIN AT ABOUT THIS TIME. SINCE I ONLY LEARNED ABOUT THIS LATER, IT WAS NOT INCLUDED IN MY LOGBOOK WRITE-UP ON THE AUTOPLT.

**Synopsis :**

DC9-50 FLC EXPERIENCED AN INVOLUNTARY TURN BY THE AUTOPLT DURING CRUISE. AUTOPLT REACTED NORMALLY AFTER THE CAPT ASKED PAX TO TURN OFF ANY PED'S. HOWEVER, LATER LEARNED THAT A CELL PHONE IN OVERHEAD BIN WAS HEARD DURING THE TIME OF THE AUTOPLT PROB.

**ACN: 504303** (*Appendix Report 9 of 17*)**Time**

Date : 200103

Day : Wed

Local Time Of Day : 1801 To 2400

**Place**

Locale Reference.Airport : ATL.Airport

State Reference : GA

Altitude.MSL.Single Value : 2800

**Environment**

Flight Conditions : VMC

**Aircraft / 1**

Controlling Facilities.TRACON : ATL.TRACON

Operator.Common Carrier : Air Carrier

Make Model : B767-300

Mission : Passenger

Flight Phase.Descent : Approach

Route In Use.Approach : Visual

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 20500

Experience.Flight Time.Last 90 Days : 400

Experience.Flight Time.Type : 8000

ASRS Report : 504303

**Person / 2**

Function.Flight Crew : First Officer

**Person / 4**

Function.Oversight : Flight Attendant In Charge

**Person / 5**

Function.Controller : Approach

**Events**

Independent Detector.Other.Flight CrewA : 1

Resolatory Action.None Taken : Anomaly Accepted

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Passenger Human Performance

**Narrative :**

WE WERE CLRED TO DSND TO 2800 FT AND FOR AN ILS APCH WHILE APPROX 8 MI FROM THE LOM. GS XING ALT IS 2795 FT. THE ILS IDENT HAD BEEN VERIFIED ON THE APCH CHKLIST. AFTER RPTING THE ARPT IN SIGHT, WE WERE RECLRED FOR A VISUAL APCH. AS WE INTERCEPTED THE LOC AT 2800 FT APPROX 4 MI FROM THE LOM, WE NOTICED BOTH HSI'S AND THE STANDBY ILS INDICATING 'FLY DOWN' AND THE ACFT BEGAN TO DSND. THE FO (PF) IMMEDIATELY DISCONNECTED THE AUTOPLT AND LEVELED THE ACFT. AS WE DOUBLECHKED ILS TUNING AND RAW DATA THE GS MOVED FROM 'FLY DOWN' TO 'FLY UP.' I CALLED THE PURSER AND INSTRUCTED HIM/HER TO WALK THROUGH QUICKLY AND LOOK FOR PAX USING PED'S. AFTER GS CAPTURE, ALL OPS WERE NORMAL. AFTER ARR AT THE GATE, THE PURSER TOLD ME THAT 2 PAX WERE FOUND WITH CELL PHONES ON. PURSER FAILED TO NOTE THE SEAT NUMBERS AND THE PAX DEPLANED WITHOUT BEING IDENTED.

**Synopsis :**

B767-300 CREW HAD FAULTY GS INDICATIONS AT ATL RWY 27L.

**ACN: 511889** (*Appendix Report 10 of 17*)**Time**

Date : 200105

Day : Wed

Local Time Of Day : 1201 To 1800

**Place**

Locale Reference.Airport : MIA.Airport

State Reference : FL

**Environment**

Ceiling : CLR

**Aircraft / 1**

Operator.Common Carrier : Air Carrier

Make Model : B767-300

Mission : Passenger

**Person / 1**

ASRS Report : 511889

**Person / 2**

Function.Oversight : Flight Attendant In Charge

**Person / 4**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Passenger Human Performance

**Narrative :**

PAX WAS USING PROFANITY AND YELLING INTO HIS CELL PHONE. I ASKED HIM TO QUIET DOWN HIS CONVERSATION. APPROX 5 MINS LATER THE PA TO TURN OFF ELECTRONIC DEVICES WAS MADE. I WAS DOING MY CABIN CHKS AND HAD TO ASK PAX TO END HIS PHONE CONVERSATION. HE IGNORED ME, AND AT THAT POINT I STOOD NEXT TO HIS SEAT AND ASKED HIM AGAIN. I WAITED AS HE CONTINUED TO IGNORE ME, THEN LOUDER I TOLD HIM TO END HIS CONVERSATION IMMEDIATELY -- WHICH HE DID, TURNING OFF HIS 'FIRST' PHONE. PASSING THROUGH THE CABIN AGAIN, WITH THE PURSER BEHIND ME, I NOTICED HE WAS ON A 'SECOND' PHONE AND ASKED THE PURSER TO ADDRESS HIM. IT WAS AT THAT POINT WHERE PAX BECAME BELLIGERENT AND VERBALLY AGGRESSIVE. THAT WAS WHEN IT WAS DECIDED HE BEST STAY IN MIA.

**Synopsis :**

B767 PAX REFUSED TO COOPERATE WITH CABIN ATTENDANTS IN DISCONTINUING USE OF HIS CELL PHONES AND WHEN INSTRUCTED TO STOP USED PROFANITY AND ABUSIVE LANGUAGE RESULTING IN THE PAX REMOVAL FROM THE FLT.

**ACN: 524699** (Appendix Report 11 of 17)**Time**

Date : 200109

Day : Sun

Local Time Of Day : 0601 To 1200

**Place**

Locale Reference.Intersection : KENIL

State Reference : IL

Altitude.MSL.Single Value : 2500

**Environment**

Flight Conditions : IMC

**Aircraft / 1**

Controlling Facilities.TRACON : C90.TRACON

Operator.Common Carrier : Air Carrier

Make Model : Regional Jet CL65, Bombardier (Canadair)

Mission : Passenger

Flight Phase.Descent : Approach

Route In Use.Approach : Instrument Precision

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 6000

Experience.Flight Time.Last 90 Days : 131

Experience.Flight Time.Type : 3500

ASRS Report : 524699

**Person / 2**

Function.Flight Crew : First Officer

**Person / 5**

Function.Controller : Approach

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

Independent Detector.Other.Flight CrewA : 1

Resolatory Action.Flight Crew : Executed Go Around

Resolatory Action.Flight Crew : Took Precautionary Avoidance Action

Resolatory Action.Controller : Issued New Clearance

**Supplementary**

Problem Areas : Aircraft

Problem Areas : FAA

Problem Areas : Passenger Human Performance

**Narrative :**

WE WERE IN THE CLOUDS AND ON A VECTOR FROM CHICAGO APCH CTLR TO JOIN THE LOCALIZER FOR RWY 22L AT ORD. BOTH NAV RADIOS HAD BEEN TUNED TO 110.1 AND THE IDENTIFIER (ILQQ) HAD BEEN RECEIVED. AS WE WERE FLYING TOWARD THE COURSE, BOTH THE CAPT'S AND FO'S CDI'S BEGAN TO WAVER BETWEEN FULL SCALE AND 'FLY RIGHT' AND FULL SCALE 'FLY LEFT' INDICATIONS. OUR DISPLAYS ALSO SHOWED INTERMITTENT LOC AND GS RED FLAGS. WE WANTED TO QUERY ATC ABOUT THE INTEGRITY OF THE 22L LOC, BUT THE CTLR WAS TALKING NON-STOP AND WE COULD NOT GET HIS ATTENTION. I WAS CONSIDERING EXECUTING A MISSED APCH WHEN THE CTLR CALLED AND ASKED US IF WE WERE RECEIVING THE LOCALIZER. WE ANSWERED THAT OUR CDI'S WERE WAVERING. THE CTLR BROKE US OFF THE APCH AND GAVE US VECTORS AROUND FOR A SECOND APCH. THE SECOND APCH TO RWY 22L WAS UNEVENTFUL AND ALL INDICATIONS WERE NORMAL. AFTER DEPLANING THE PAX AT THE GATE, WE DISCUSSED WHAT HAD HAPPENED WITH THE FLT ATTENDANT. THE FLT ATTENDANT STATED THAT, DURING HER FINAL WALK THROUGH THE CABIN BEFORE LANDING, SHE HAD TO ASK A PAX TO TURN OFF A CELL PHONE THAT HE WAS USING. BY MY ESTIMATION, THE TIME THAT THE FLT ATTENDANT SAID SHE SAW THE PAX USING HIS CELL PHONE CORRELATES APPROX TO THE TIME WE WERE RECEIVING THE

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FAULTY LOCALIZER COURSE INDICATIONS DURING THE FIRST APCH.

Synopsis :

CL65 CREW HAD ERRATIC LOC AND GS CAUSED BY PAX **CELL PHONE** USE.

**ACN: 530849 (Appendix Report 12 of 17)****Time**

Date : 200111

Day : Mon

Local Time Of Day : 1201 To 1800

**Place**

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 35000

**Environment**

Ceiling : CLR

**Aircraft / 1**

Controlling Facilities.ARTCC : ZLA.ARTCC

Operator.Common Carrier : Air Carrier

Make Model : B757-200

Mission : Passenger

Flight Phase.Cruise : Level

**Person / 1**

ASRS Report : 530849

**Person / 4**

Function.Flight Crew : First Officer

**Person / 3**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Airport

Problem Areas : Chart Or Publication

Problem Areas : Company

Problem Areas : Passenger Human Performance

**Narrative :**

I NOTICED PAX WAS USING 2 CELL PHONES AT SAME TIME. I SAID 'SIR, YOU NEED TO TURN THOSE CELL PHONES OFF.' HE LOOKED AT ME AND CONTINUED TO KEEP PUNCHING THE BUTTONS ON BOTH CELL PHONES. I ASKED HIM AGAIN STERNLY TO TURN THEM OFF. AGAIN, HE IGNORED ME. I LEANED OVER THE OTHER 2 PAX SO I COULD AGAIN ASK HIM TO TURN PHONES OFF, SO I WOULDN'T BE OVERHEARD BY MORE PAX. HE SAID 'CAN'T YOU BE NICE TO ME.' NOW 3 WOMEN AND 2 YOUNG GIRLS STARTED TO CRY THAT WERE SEATED IN ROW XYZ. I TOLD THE WOMEN NOT TO BE UPSET. I THEN TOLD THE PAX THAT I WOULD INFORM CAPT ABOUT SIT. HE DID NOT CARE. HE SHOWED NO EMOTION AND SAID AGAIN 'CAN'T YOU TALK NICE TO ME?' WITH NO REPLY I WENT TO CALL CAPT. CAPT TOLD ME TO INFORM PAX WE WOULD LAND IN ZZZ, US. I WENT BACK TO THE PAX AND TOLD HIM. HE WAS UNAFFECTED. STILL KEEP PHONES ON. HE AGAIN SAID 'CAN'T YOU BE NICE TO ME.' I SAID 'DO YOU WANT TO INCONVENIENCE ALL THE PAX BY DIVERTING TO ZZZ ARPT?' HE REPLIED, 'CAN'T YOU TALK NICE TO ME?' NO PAX SAID ANYTHING TO HELP ME, EXCEPT FOR AN ELDERLY WOMAN WHO TOLD PAX TO 'STOP BEING IMMATURE AND TURN THE PHONES OFF.' HE TOLD HIM OK, I WILL NOTIFY CAPT. I TURNED TO WALK AWAY WHEN HE TURNED PHONES OFF. I TOLD CAPT HE FINALLY TURNED PHONES OFF. CAPT TOLD ME TO RETRIEVE PHONES FROM PAX. (HOW DO YOU KNOW THEY WEREN'T REMOTE CONTROLS TO SOMETHING.) FEELING LIKE A PUPPET, I INFORMED PAX THAT CAPT WANTED HIS PHONES. IT TOOK ME ANOTHER 5 MINS TO RETRIEVE PHONES. I FINALLY GOT PHONES AND GAVE THEM TO CAPT. I TOLD CAPT THAT THIS PAX NEEDED TO BE MET BY POLICE AND ARRESTED. IT TOOK 15 MINS OF MY TIME AWAY FROM SERVING THE PAX. HE ALSO UPSET MANY OF OUR PAX THAT WERE ALREADY VERY FRIGHTENED. THE PAX DID HAVE A FOREIGN ACCENT WHICH I AND EVERYONE ELSE DETECTED 5 MINS INTO THE CONFRONTATION. PAX WAS MET BY POLICE AND GND PERSONNEL AND DETAINED, BUT NOT ARRESTED! WE THE CREW WERE APPALLED. #1, HE INTERFERED WITH FA DUTIES AND INSTRUCTIONS. #2, HE WAS CALM AND COULD CARE LESS THAT WE WERE GOING TO DIVERT TO ZZZ ARPT. THIS PAX HAS A 'BIG' PROB. I HOPE AT LEAST ACR WILL NOT LET HIM TRAVEL ON US AGAIN. HE TOLD PLT HE FLIES ON US TWICE A WEEK AND ALWAYS

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Turns phone off. So why was he being so defiant where he would upset our pax and stood chance of getting arrested

Synopsis :

A B757 cabin attendant requested a pax using two cell phones to turn them off. Pax refused and created a disruption and confrontation.



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**ACN: 535709** (Appendix Report 13 of 17)**Time**

Date : 200201

Day : Thu

Local Time Of Day : 1201 To 1800

**Place**

State Reference : NM

**Aircraft / 1**

Controlling Facilities.ARTCC : ZAB.ARTCC

Operator.Common Carrier : Air Carrier

Make Model : MD-80 Super 80

Mission : Passenger

Flight Phase.Cruise : Level

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

ASRS Report : 535709

**Person / 2**

Function.Flight Crew : First Officer

**Person / 6**

Function.Controller : Radar

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

Anomaly.Non Adherence.Other : cell phone use

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Cabin Crew Human Performance

Problem Areas : Navigational Facility

Problem Areas : Passenger Human Performance

**Narrative :**

JUST AFTER PASSING BY PHX, WHILE ENRTE FROM DFW TO ONT, THE #4 FA ADVISED ME THAT SHE HAD OBSERVED THE PAX IN SEAT XA USING HIS CELL PHONE AND THAT WHEN SHE TOLD HIM THAT HE COULDN'T USE IT IN FLT HE GAVE HER A 'YEAH, YEAH' TYPE OF REPLY BUT CONTINUED TALKING ON IT. SHE SAID THAT ALTHOUGH HE HAD BEEN SOMEWHAT ARGUMENTATIVE HE HAD FINALLY COMPLIED. SHE ALSO INFORMED ME THAT THIS SAME PAX HAD BEHAVED STRANGELY DURING THEIR PREFLT SAFETY DEMO 'HOLLERING' AND 'CHEERING' BUT HAD SETTLED DOWN WHEN INSTRUCTED TO DO SO, AND THAT HE HAD 'CONKED OUT' SHORTLY AFTER TKOF. A FEW MINS LATER, I WAS INFORMED THAT THIS SAME PAX WAS AGAIN USING HIS CELL PHONE. AT THIS TIME I CONTACTED ONT OPS AND ADVISED THEM OF THE SIT AND REQUESTED THAT THE FLT BE MET BY THE AUTHORITIES AND THAT THIS PAX BE ESCORTED FROM THE ACFT. ARRIVING AT THE GATE WE WERE MET BY A NUMBER OF LAW ENFORCEMENT OFFICERS WHO ESCORTED THE INDIVIDUAL FROM THE ACFT WITHOUT ANY APPARENT FURTHER INCIDENT.

**Synopsis :**

A S80 PIC HAS TO CALL COMPANY OPS FOR A PAX TO BE MET BY SECURITY PERSONNEL FOR UNAUTH USE OF HIS CELL PHONE IN FLT WHILE ENRTE TO ONT, CA.

**ACN: 536654** (Appendix Report 14 of 17)**Time**

Date : 200201

Day : Sun

Local Time Of Day : 1801 To 2400

**Place**

Locale Reference.Airport : MDW.Airport

State Reference : IL

Altitude.MSL.Single Value : 3000

**Environment**

Flight Conditions : VMC

Ceiling.Single Value : 12500

**Aircraft / 1**

Controlling Facilities.TRACON : C90.TRACON

Operator.Common Carrier : Air Carrier

Make Model : B737-500

Mission : Passenger

Flight Phase.Descent : Approach

Route In Use.Approach : Instrument Precision

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 10500

Experience.Flight Time.Last 90 Days : 250

Experience.Flight Time.Type : 5500

ASRS Report : 536654

**Person / 2**

Function.Flight Crew : First Officer

**Person / 4**

Function.Controller : Approach

**Events**

Anomaly.Altitude Deviation : Crossing Restriction Not Met

Anomaly.Altitude Deviation : Undershoot

Anomaly.Non Adherence : Clearance

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Independent Detector.Aircraft Equipment.Other Aircraft Equipment : ils loc crs

Independent Detector.Other.Flight CrewA : 1

Resolatory Action.Flight Crew : Executed Go Around

Resolatory Action.Controller : Issued Advisory

Resolatory Action.Controller : Issued New Clearance

**Supplementary**

Problem Areas : Aircraft

Problem Areas : ATC Human Performance

Problem Areas : Cabin Crew Human Performance

Problem Areas : Flight Crew Human Performance

Problem Areas : Passenger Human Performance

**Narrative :**

NAV INTERFERENCE. OVER CHT. CLRED '10 DEGS R INTERCEPT LOC RWY 31L PLAN CIRCLE RWY 22L.'  
 UPON TUNING LOC FREQ AND SETTING COURSE, IT APPEARED WE WERE ON THE LOC, ALTHOUGH  
 VISUALLY WE APPEARED S OF COURSE. ATC ASKED IF WE HAD INTERCEPTED AND SAID WE WERE S OF  
 COURSE. THE CDI THEN SWUNG FULL SCALE TO THE OTHER SIDE INDICATING WE WERE N OF COURSE. I  
 TURNED TO CTR THE CDI AND WE SWITCHED TO TWR. MY CDI SWUNG R INDICATING WE WERE S OF  
 COURSE. I NOTICED THE FO'S CDI WAS SWINGING THE SAME DIRECTION AS MINE, BUT MOVING ABOUT  
 HALF AS FAR. WHEN WE SAW THE RWY. WE WERE N OF COURSE WITH CDI'S INDICATING WE WERE S OF

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COURSE. WE WERE HIGH AND WELL N OF COURSE WHEN TWR ASKED IF WE COULD GET DOWN FROM THERE. WE ASKED TO BE TURNED OUT TO RE-ENTER THE PATTERN. UPON TURNING OUTBOUND WE MADE A PA ASKING PEOPLE TO PLEASE MAKE SURE THEIR CELL PHONES AND OTHER EQUIP WERE TURNED OFF. THE CDI'S IMMEDIATELY BECAME STEADY AND WE COMPLETED A NORMAL ILS RWY 31C. CIRCLE RWY 22L WITH NORMAL INDICATIONS AND THE FLT ATTENDANTS RPTED THAT A WOMAN IN THE FORWARD LOUNGE WAS TALKING ON HER CELL PHONE. AS SOON AS SHE TURNED HER PHONE OFF, OUR CDI INDICATED NORMALLY.

## Synopsis :

EMI. A B737-500 FLC HAS TO ASK FOR A SECOND APCH WHEN THE ILS LOC AND GS FOR RWY 31L IS SCALLOPING AT MDW, IL.

**ACN: 538688** (*Appendix Report 15 of 17*)**Time**

Date : 200201

Day : Tue

Local Time Of Day : 0601 To 1200

**Place**

Locale Reference.Airport : SVMI.Airport

State Reference : FO

**Aircraft / 1**

Controlling Facilities.Tower : SVMI.Tower

Operator.Common Carrier : Air Carrier

Make Model : A300

Mission : Passenger

**Person / 1**

ASRS Report : 538688

**Person / 4**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Independent Detector.Other.Flight CrewA : 4

**Supplementary**

Problem Areas : Cabin Crew Human Performance

Problem Areas : Company

Problem Areas : Passenger Human Performance

**Narrative :**

PAX DURING TAXI OUT ANSWERED CELL PHONE CALL AND HEADED BACK TO THE LAVATORY. I TOLD PAX TO TURN OFF PHONE AND BE SEATED (IN ENGLISH AND SPANISH). PAX IGNORED ME AND WENT INTO LAVATORY TO CONTINUE CONVERSATION. DEMO VIDEO WAS FINISHED AND CAPT SAID FLT ATTENDANTS PREPARE. WHEN PAX CAME OUT. I TOLD PAX TO HAVE A SEAT AND IGNORED AGAIN MY REQUEST. THEN PAX BECAME ANGRY AND SAID 'WHAT ARE YOU GONNA DO IF I DON'T SIT DOWN?' ANOTHER FLT ATTENDANT NOTICED THE CONFRONTATION AND AGAIN PAX ASKED 'WHAT ARE YOU GONNA DO?' PAX WAS THEN ASKED TO BE SEATED AND REFUSED AND WAS THEN ASKED TO GET HIS LUGGAGE AS WE RETURNED TO HAVE PAX REMOVED FROM FLT.

**Synopsis :**

PAX REMOVED FROM FLT AFTER GND CELL PHONE USAGE IN LAVATORY DURING TAXI OUT AND WHEN HE LATER REFUSED TO SIT DOWN PRIOR TO TKOF AT SVMI, FO.

**ACN: 548186** (Appendix Report 16 of 17)**Time**

Date : 200205

Day : Sat

Local Time Of Day : 1201 To 1800

**Place**

Locale Reference.Airport : MIA.Airport

State Reference : FL

**Environment**

Ceiling : CLR

**Aircraft / 1**

Operator.Common Carrier : Air Carrier

Make Model : MD-80 Super 80

Mission : Passenger

**Person / 1**

ASRS Report : 548186

**Person / 4**

Function.Oversight : PIC

Function.Flight Crew : Captain

**Events**

Anomaly.Non Adherence : Company Policies

Anomaly.Non Adherence : FAR

Anomaly.Non Adherence : Published Procedure

**Supplementary**

Problem Areas : Cabin Crew Human Performance

Problem Areas : Flight Crew Human Performance

Problem Areas : Passenger Human Performance

**Narrative :**

ON A FLT FROM MIA TO ORD WE HAD A PAX INTERFERE WITH OUR DUTIES AND REFUSE TO FOLLOW INSTRUCTIONS TO TURN OFF HER CELL PHONE. THE PAX WAS TOLD 3 DIFFERENT TIMES TO TURN OFF HER CELL PHONE SO WE COULD DEPART. SHE TURNED IT OFF AT FIRST, THEN WHEN I WALKED PAST HER, 2 MINS LATER, SHE HAD HER HEAD BENT OVER INTO HER CARRY ON BAG TALKING ON HER CELL PHONE. I FINALLY TOLD HER THAT I NEEDED TO WRITE UP A WARNING LETTER ON HER SINCE SHE REFUSED TO COMPLY WITH OUR FAA REQUIREMENTS. I THEN WENT TO TELL THE CAPT WHAT WAS GOING ON. JUST THEN FLT ATTENDANT #2 CAME UP FROM THE BACK TO TELL ME THAT HE HEARD THE PAX CALL ME A 'BITCH' AS I WALKED UP FRONT. HE SAID HE TOLD HER THAT HE HEARD THAT AND SHE ADMITTED TO HIM THAT SHE DID SAY THAT. THE CAPT WENT TO SPEAK TO HER. I WASN'T THERE TO HEAR WHAT WAS SAID, BUT I DO KNOW THAT SHE WAS ON HER BEST BEHAVIOR DURING THE FLT SO WE (THE CREW) DECIDED NOT TO WRITE UP THE WARNING LETTER ON HER. WE FIGURED SHE LEARNED HER LESSON AND FELT BAD AS SHE NOW BEHAVED APPROPRIATELY. BOY, WERE WE WRONG. AFTER WE LANDED AND EVERYONE DEPLANED, SHE STEPPED INTO THE COCKPIT AND WAS VERBALLY ABUSIVE WITH THE CAPT. SHE TALKED UP THERE FOR ABOUT 5 MINS, ALL THE TIME BEING VERY HOSTILE AND ARGUMENTATIVE. THE CAPT KEPT TRYING TO EXPLAIN TO HER ABOUT FOLLOWING THE RULES OF TURNING OFF THE CELL PHONES. HE EVEN EXPLAINED WHY IT'S IMPORTANT BUT SHE DIDN'T WANT TO HEAR THAT, SHE JUST KEPT STATING THAT IT WAS VERY UPSETTING TO HER THAT SHE WAS REPRIMANDED FOR NOT TURNING OFF HER CELL PHONE.

**Synopsis :**

THE CREW OF AN S80 HAS A PROB WITH A PAX ATTEMPTING TO USE HER CELL PHONE IN SPITE OF REPEATED WARNINGS FROM THE FLT ATTENDANTS AND PIC PRIOR TO DEP FROM MIA, FL.

**ACN: 557959** (*Appendix Report 17 of 17*)**Time**

Date : 200208

Day : Mon

Local Time Of Day : 1201 To 1800

**Place**

Locale Reference Airport : ATL Airport

State Reference : GA

Altitude.MSL Single Value : 4500

**Environment**

Flight Conditions : Mixed

**Aircraft / 1**

Controlling Facilities.TRACON : A80.TRACON

Operator.Common Carrier : Air Carrier

Make Model : B727-200

Mission : Passenger

Flight Phase.Descent : Approach

Route In Use.Approach : Instrument Precision

**Person / 1**

Function.Oversight : PIC

Function.Flight Crew : Captain

Experience.Flight Time.Total : 10000

Experience.Flight Time.Last 90 Days : 180

Experience.Flight Time.Type : 4000

ASRS Report : 557959

**Person / 2**

Function.Flight Crew : First Officer

Experience.Flight Time.Total : 5000

Experience.Flight Time.Last 90 Days : 120

Experience.Flight Time.Type : 1000

ASRS Report : 557959

**Person / 6**

Function.Controller : Approach

**Person / 3**

Function.Flight Crew : Second Officer

Experience.Flight Time.Total : 5500

Experience.Flight Time.Last 90 Days : 200

Experience.Flight Time.Type : 900

ASRS Report : 557959

**Events**

Independent Detector.Aircraft Equipment.Other Aircraft Equipment : CDI

Independent Detector.Other.ControllerA : 4

Independent Detector.Other.Flight CrewA : 1

Resolatory Action.Flight Crew : Became Reoriented

Resolatory Action.Flight Crew : Executed Go Around

Resolatory Action.Controller : Issued Alert

Resolatory Action.Controller : Issued New Clearance

**Supplementary**

Problem Areas : Aircraft

Problem Areas : Environmental Factor

Problem Areas : Flight Crew Human Performance

Problem Areas : Passenger Human Performance

Problem Areas : Weather

Narrative :

## AFA Comments to FCC WT 04-435

APCHING ATL FROM SW TOLD TO EXPECT RWY 27L. SUBSEQUENTLY CHANGED AND GIVEN ILS RWY 26R. NUMEROUS DEVS DUE TO TSTMS IN LCL AREA. APCH GAVE TURN TO 240 DEGS TO INTERCEPT LOC TO RWY 26R. CAPT PF NOTED IRREGULAR DEVS ON HIS CDI. FO LATE SWITCHING TO NEW LOC FREQ DUE TO USING WX RADAR. CAPT COMMANDED ON CDI DEVS AS FO SWITCHING TO LOC. CAPT'S CDI WENT TO FULL R DEFLECTION AND CAPT STARTED R TURN TO GO BACK. INTERCEPT VERIFIED BY FO'S CDI. AT THAT TIME, ATC DIRECTED FLT TURN TO 180 DEGS AND MAINTAIN 4500 FT DUE TO PASSING THROUGH LOC. SUBSEQUENT APCH WAS NORMAL. AFTER FLT, FLT ATTENDANT RPTD THAT ON APCH, A CELL PHONE WAS RINGING IN THE CABIN AND PAX ANSWERED CALL. SHE WAS UNABLE TO LOCATE WHICH PAX. CALLBACK CONVERSATION WITH RPTR REVEALED THE FOLLOWING INFO: WHILE ON THE INTERCEPT HDG, RPTR'S LOC NEEDLE SEEMED ERRATIC, LEADING HIM TO BELIEVE SOMETHING WAS WRONG WITH HIS RECEIVER. BY THE TIME THE FO'S ILS WAS TUNED IN, THEY HAD GONE THROUGH THE LOC. AT THAT POINT ATC, DUE TO THE WX AND THE HVY VOLUME OF TFC, ISSUED A GAR. NO FURTHER INFO REGARDING POSSIBLE CELL PHONE INTERFERENCE WAS FORTHCOMING.

## Synopsis :

A B727-200 CREW, ON INTERCEPT HDG FOR AN ILS TO ATL, EXPERIENCED IRREGULAR LOC DEFLECTIONS ON THE CAPT'S CDI, RESULTING IN A CORRECTIVE VECTOR FROM ATC.



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**TESTIMONY  
MR. PAUL GUCKIAN  
SENIOR DIRECTOR, TECHNOLOGY  
QUALCOMM, INCORPORATED.  
U.S. HOUSE OF REPRESENTATIVES  
SUBCOMMITTEE ON AVIATION  
HEARING ON CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY?  
JULY 14, 2005 10:00 am**

QUALCOMM is a leading developer and supplier of digital wireless communications products and services. QUALCOMM has developed core wireless technology based upon code division multiple access (CDMA). CDMA is the world standard for the wireless communications industry. The company's roots are in the transportation industry; QUALCOMM's earliest success is OmniTRACS, a two-way, end-to-end satellite communications fleet management system that transformed the long-haul trucking industry by increasing productivity and enabling just-in-time delivery. In 1995, QUALCOMM was the first recipient of the Department of Transportation's "Secretarial Award for Excellence in Transportation Technology Research and Development" in recognition of the OmniTRACS system's contribution to improved efficiency, safety and environmental quality.

This testimony addresses the extensive research and development that QUALCOMM has conducted in the area of wireless communications technology for aviation use. Our primary goal has been to determine whether cell phone use can be implemented safely and reliably on aircraft within acceptable interference standards for both aircraft communications systems and ground-based wireless networks.

The results of our research, which has focused primarily on CDMA technology, have been very promising, although we believe further research needs to be undertaken. In addition, the testimony addresses the issues of in-flight cell phone etiquette and homeland security, two issues that have arisen as the technology to permit cell phone use on an aircraft has come closer to reality.

**The Pico Cell System**

QUALCOMM is an original member of RTCA Special Committee 202 (SC – 202) and I am co-chair of working group 4 of this committee. Our participation in SC-202 and interaction with other industry groups has led QUALCOMM to engage in



a program of development, analysis, and testing to assess the potential for mobile phone interference with aircraft systems and terrestrial mobile phone networks.

The system that we have used as the platform for our research and analysis allows wireless devices on an aircraft to communicate to and from a pico cell, which is mounted in the aircraft. The pico cell is connected to the ground through a licensed air-to-ground link. A pico cell uses standard cellular base station transceiver technology that has been packaged into a unit the size of a laptop. This unit has very low transmitter power as it is designed to provide cellular coverage to small areas with a relatively high number of users. In addition, the system consists of a base station controller, and antenna subsystem. Because wireless devices on aircraft are in close proximity to the pico cell, they transmit at significantly lower power levels compared to when they are used on the ground. Typically they do not get as close to the standard cellular base stations used in the ground networks.

A CDMA on board pico cell can support up to 100 simultaneous users and enables both voice and data communications, i.e. text messaging, internet access, e-mail, and other non-voice services such as multimedia down loads. The air-to-ground link bandwidth limits the number of simultaneous calls or data rate per passenger. With the exception of Connexion By Boeing's system, the air to ground links used in most commercial aircraft today are only capable of 10's of kbps, which can only support a small number of voice calls or low data rate for passengers using data services. QUALCOMM understands that is about to change with the introduction of new broadband links proposed by companies such as Verizon Airfone.

#### **QUALCOMM/American Airlines Demonstration**

On July 15, 2004, QUALCOMM and American Airlines conducted a successful, live, proof-of-concept demonstration of the CDMA pico cell technology. The demonstration allowed passengers to use mobile phones on a commercial aircraft (MD Super 80), including both two-way voice communications, and short text messaging service. Up to 15 simultaneous calls were supported by the system.

For the live demonstration, QUALCOMM obtained an experimental license from the FCC. The Qualcomm equipment installation in the aircraft was certified via a Supplemental Type Certificate. American Airlines worked with its FAA representatives to get their concurrence on the unique aspects of the charter flight. Prior to the demonstration, QUALCOMM and American Airlines conducted a number of ground based and airborne tests to identify any interference with the actual aircraft and to identify and solve some of the design challenges associated with an airborne system. No aircraft interference was detected.

The ground segment of the airborne system was connected into the public network as well as the Sprint PCS wireless network. As a result, passengers were able to use their own Sprint CDMA phones. For purposes of this demo, the air-to-ground link was provided through the Globalstar satellite system and its commercial gateway in Clifton, Texas.

#### **Other QUALCOMM Research To Date**

In addition to the testing performed in collaboration with American Airlines, QUALCOMM has conducted three other significant test programs using the CDMA pico cell system and multiple CDMA phones. First, in June 2003 QUALCOMM made measurements on a Boeing 727 aircraft in order to determine aircraft cabin propagation characteristics including signal addition and cancellation as a result of the metal fuselage. Another goal of this test program was to determine how much shielding is provided by the aircraft skin at cellular and PCS frequencies.

Second, from 2003 to 2004 QUALCOMM used a corporate business jet aircraft to measure cell phone activity over the course of ten flight legs across the continental U.S. and up and down the West Coast. QUALCOMM collected logs from PCS and Cellular phones on board the aircraft at all phases of the flight. The data allowed us to understand the behavior of commercial CDMA handsets during in-flight conditions and establish the power levels necessary for an airborne CDMA pico cell system to overcome the signals radiating from the ground networks.

Third, in conjunction with Boeing in April 2004, QUALCOMM conducted research into the potential interference from a CDMA pico cell system to terrestrial wireless networks. During this exercise, 100 commercially available handsets were distributed evenly throughout the passenger cabin and flight deck of a single aisle MD-90 aircraft. Measurements were taken exterior to the aircraft out to a range of approximately 1 km under two test case scenarios: one using the in-cabin pico cell and the other "worst case" scenario where all phones were manually set to full power transmission uncontrolled by the onboard pico cell. As the QUALCOMM engineering team measured the CDMA signals radiating from the aircraft, a team of Boeing engineers and an FAA observer were making measurements on the aircraft systems to determine if there was any interference. No anomalies were observed. A full report was submitted to the RTCA SC-202 for review by the committee.

More information about the research we have conducted on this topic is available in our filing of May 26<sup>th</sup>, 2005 at the FCC in its proceeding on the use of cellular telephones and other wireless devices aboard airborne aircraft.

### Results of Research to Date

The test results to date are promising. One key feature of CDMA technology is the range of the closed loop power control. When CDMA phones are close to the cell tower they transmit at micro-watt power levels. In the case of the airborne pico cell QUALCOMM has verified that in the aircraft cabin environment cellular and PCS CDMA phones can be power controlled such that they are transmitting micro-watts at all locations within the cabin. This very low level of power significantly reduces the potential for interference to aircraft systems and terrestrial networks. When compared to Wi-Fi devices that have been approved for use on certain commercial aircraft today, the pico cell controlled CDMA phone is transmitting at approximately 1,000 times lower power.

In addition, our research has indicated that the combined transmit power of all phones that connect to and are controlled by the pico cell is significantly lower than the power of any single phone that has been left on and attempts connection with ground networks while airborne. Reports have shown that in spite of the existing restrictions on the use of cell phones on aircraft, nearly every commercial flight has at least one transmitting cell phone. In addition, some passengers are intentionally using their cell phones/PDAs for communications with ground networks while in flight. Although this connectivity is not reliable at cruising altitudes, it is possible to achieve reasonable connectivity at lower altitudes such as in the climb and descent phases of flight.

In support of RTCA SC-202 QUALCOMM has presented a number of reports detailing emissions from mobile phones, their failure modes and transmit characteristics. We supported NASA Langley<sup>1</sup> in a test program that they performed on 3G mobile phones and they reported that in most cases, phones have better safety margins than laptops and PDAs due to their lower emissions. Laptops and PDA's are approved for use today on all commercial aircraft and in the case of Lufthansa the Wi-Fi feature on these devices is also approved for use.

Regarding terrestrial networks, the tests indicate that airborne CDMA networks present the lowest levels of interference due to the range of power control. Other technologies do not power control down to the levels of CDMA and so present a higher potential for interference. Further work is required to determine what level of interference would be found tolerable by the terrestrial carriers and what are the necessary countermeasures to meet these requirements.

QUALCOMM believes that it should be up to the wireless carriers to decide whether they want to accept a low level of interference in exchange for the revenue-generating opportunities the wireless carriers will enjoy from the use of

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<sup>1</sup> Third Generation Wireless Phone Threat Assessment for Aircraft Communication and Navigation Radios, NASA/TP-2005-213537, March 2005

these devices on planes. No wireless carrier should have to accept interference involuntarily.

In sum, we believe that an onboard pico cell does have the potential to allow the safe introduction of cell phone service on aircraft. With the continued growing penetration of cell phone use in this country, it is important that the Government update its regulations to address current technical and market conditions. We applaud the FAA and the FCC for undertaking reviews of their regulations in this area.

### **Additional Research Areas**

QUALCOMM is currently engaged in the following research areas:

First, we will continue to support RTCA SC-202's work to evaluate compatibility between transmitting passenger electronic devices and aircraft avionics. This includes participation in collaborative testing with consumer equipment manufacturers, aircraft manufacturers, avionics equipment manufacturers, airlines, and research groups from government and academia.

Second, we are evaluating what mechanisms can be introduced to prevent an airborne phone from attempting to connect with the ground networks in preference to an on-board pico cell. RF-based solutions such as aircraft shielding and noise floor elevation will be tested in conjunction with industry partners to evaluate their relative efficacy, practicality, cost-effectiveness, and cross-technology compatibility.

Third, so far, evaluation of potential interference to terrestrial mobile networks has been based on link budget analysis incorporating assumptions about aircraft penetration losses and other variables. Attempts to measure air-to-ground interference experimentally have been inconclusive to date. We will perform further ground-based aircraft testing in conjunction with industry partners to evaluate the characteristics of signal leakage from aircraft cabins. We also plan to do flight tests to measure aircraft-to-ground and ground-to-aircraft propagation under well-controlled conditions to validate our analyses and ground-based measurements. Aircraft position and orientation with respect to the ground measurement site must be carefully accounted for during all tests.

Fourth, there is general agreement in the industry that any in-flight system implemented for use in the U.S. must support both cdma2000 1X and GSM at a minimum. It is likely that other technologies such as 1xEV-DO, 802.11a/b/g and WCDMA will be supported at some point. These multi-technology systems pose unique design challenges which require further research, development, and testing.

### Public Interest Issues

QUALCOMM is aware that a number of public interest issues have been raised as the FAA and FCC continue their processes of evaluating the feasibility of introducing cellular use on aircraft. We would like to offer a few thoughts on these public interest issues that arise from our research and development in this area.

Etiquette. Some have claimed that cell phone use on aircraft will disturb passengers who are hoping for peace and quiet. From the technology perspective, the mobile phone is "tuned" to pick up voice frequencies and so there is no need for passengers to speak loudly. In fact, shouting into a CDMA phone causes distortion due to the sensitivity of the technology. This became very apparent to the passengers during the American Airlines demo and they quickly adapted and reduced their voice level significantly.

QUALCOMM recognizes that should voice services be chosen by an airline, some passenger education is required as people will naturally talk louder due to the high ambient noise level of the aircraft. We would anticipate that the airline would be responsible for this aspect of passenger etiquette, just as airlines today routinely enforce other aspects of passenger etiquette.

QUALCOMM would also like to highlight the fact that data services are a key component of wireless connectivity, and today's 3G cellular and PCS networks have evolved to support these key services. The same data services that are offered today by the terrestrial service providers would also be enabled through the use of CDMA pico cell technology on board aircraft. This would provide passengers with in flight access to e-mail, web searches, games and multimedia downloads. We believe the air carriers can devise appropriate parameters to cell phone use as part of their efforts to attract and maintain passengers.

Finally, even if cellular/PCS phone wireless connectivity is not provided on a commercial aircraft the passengers will want to use the non-wireless features of their phones such as games, music player, personal organizer, pre-loaded videos/media. In this case the airlines must have procedures in place to ensure the radio is disabled. This would also be desirable from the terrestrial provider's perspective as they do not want the increased interference due to cellular/PCS phones being active and potentially transmitting and attempting connection to ground systems.

The comments provided by QUALCOMM apply to Wireless Wide Area Network (W-WAN) devices using the cellular and PCS frequency bands. Such devices include much more than just mobile phones—devices such as Blackberries, WWAN-enabled laptops (i.e., laptops using PC cards to access wireless data service over the cellular and PCS bands), and PDAs.

Homeland Security. The FAA's and FCC's existing limitations on the use of cell phone use were not put in place to combat terrorism, but rather to prevent interference to terrestrial ground networks and avionics. If it is proven that the interference from new systems such as the pico cell do not pose an unacceptable risk of interference either to avionics or terrestrial wireless networks, the existing prohibitions will no longer serve a purpose. Whether additional restrictions are in order for other reasons, such as to preserve homeland security, is a question the appropriate agency or agencies within the Federal Government would need to review. However, with the introduction of broadband connectivity to commercial aircraft through systems such as Connexion by Boeing, passengers today have the ability to use PDAs, laptops and mobile phones with Wi-Fi capability to communicate with the ground using instant messaging, e-mail and even voice over IP. This is happening today on Lufthansa and is expanding to other airlines that fly over the United States.

### **Conclusion**

QUALCOMM has done considerable research on the question of interference to avionics and terrestrial wireless networks from the use of portable electronic devices using a CDMA pico cell network. This system shows promising capabilities for allowing aviation passengers to use a wide range of mobile devices while in flight without compromising the safety of the aviation system or the reliability of terrestrial wireless networks. Some additional work needs to be completed, and we stand ready to assist Government agencies in completing the necessary research. Today's mobile phone has many capabilities beyond basic voice. Increasingly consumers are relying on their mobile devices for such applications as e-mail, multimedia downloads, entertainment, internet access and even live TV. These applications are available today on certain commercial airlines, and will become the expectation of flying consumers as the use of mobile electronic devices continues to grow. It is therefore imperative that Government regulations address the complex safety and public interest issues related to the use of portable electronic devices on aircraft.

**TESTIMONY OF**

**Julius P. Knapp**

**Deputy Chief, Office of Engineering and Technology  
Federal Communications Commission**

**On**

**“Cell Phones on Aircraft: Nuisance or Necessity?”**

**Before**

**The U.S. House of Representatives  
Subcommittee on Aviation  
Committee on Transportation and Infrastructure**

**July 14, 2005**

**Testimony of Julius P. Knapp, Deputy Chief,  
Office of Engineering and Technology, Federal Communications Commission**

Introduction

Good morning Chairman Mica, Ranking Member Costello, and Members of the Subcommittee. I am Julius Knapp, Deputy Chief of the Office of Engineering and Technology at the Federal Communications Commission ("FCC" or "Commission"). Thank you for this opportunity to appear before you today on behalf of the Commission to discuss the regulatory structure and engineering parameters related to cellular phones on aircraft.

The FCC is an independent United States Government Agency directly responsible to Congress pursuant to the Communications Act of 1934, as amended. The statute charges the Commission with the regulation of interstate and international communications by radio, television, wire, satellite and cable. Within the Commission, the Office of Engineering and Technology ("OET") is responsible for the technical aspects involved in managing the use of the nation's airwaves or radio spectrum. In carrying out this responsibility, OET works in collaboration with other bureaus and offices within the Commission to evaluate the potential for radio interference among various radio services and equipment.

Current Rules

The Commission's rules at section 22.925 prohibit the use of cellular phones in the 800 MHz band on aircraft, except for aircraft on the ground. The Commission codified these rules in 1991 after concluding that the interference caused by in-flight use would be disruptive across a wide area and affect large numbers of users on the ground. Although the Commission prohibits the use of cellular phones while airborne, its rules provide 4 MHz of spectrum in a separate frequency band for use by the Air-Ground Radiotelephone Service. The Commission recently provided for a



phase-out of the existing Air-Ground Radiotelephone Service and restructuring of the band to allow the provision of new broadband services on aircraft by one or two licensees. In addition, the Commission has granted a waiver to AirCell, Inc. that permits AirCell to offer air-ground service in spectrum allocated for the cellular radio service using specialized plane-mounted antennas and handsets, which are employed primarily on private aircraft.

The Commission's rules do not address potential interference to aircraft communications and avionics systems, including all radio and electronic devices. The FCC defers to the FAA to regulate devices and activities that might interfere with the safe operation of aircraft. The FAA regulates the use of mobile telephones, as well as other portable electronic devices on aircraft, to ensure aircraft safety. In this regard, the FAA has issued regulations that prohibit the use of such devices aboard aircraft unless the operator, or certificate holder in the case of an air carrier, verifies that use of any portable electronic device ("PED") will not interfere with the aircraft's communications or navigation systems. The FAA and RTCA, Inc. ("RTCA") are currently studying the impact of PEDs on aircraft navigation and safety.

#### Cellular Phone Rulemaking

On December 15, 2004, the Commission adopted a *Notice of Proposed Rulemaking* ("NPRM") to consider whether new technological developments warrant changes to the current rule prohibiting airborne usage of cellular handsets. The Commission closed its initial comment period for the NPRM on May 26, 2005; reply comments are due on August 11, 2005. In this proceeding, the Commission has received comments from over 7,000 individuals and more detailed substantive comments from 30 parties, which it is in the process of reviewing.

The NPRM invited comment on whether technology advances that have occurred since the original adoption of the rule could permit operation of wireless handsets and devices, including

those used for broadband applications, on aircraft without causing interference to terrestrial radio services. The NPRM also invited comment on several potential technical approaches that could permit such operation. In addition, the Commission requested comments on whether or not any restrictions adopted should apply to handsets and devices operating under the Commission's rules in sections other than section 22.925.

As mentioned, the Commission received a large number of comments. Many individuals expressed concern that allowing the use of cell phones on aircraft would be a nuisance to other passengers. A number of commenters that addressed the substantive interference issues argued generally that under certain conditions the use of cell phones on aircraft would not pose undue interference to terrestrial radio services.

In the NPRM, the Commission stated that any steps the Commission ultimately may take will be subject to the rules and policies of the FAA and aircraft operators with respect to the use of personal electronic devices, including cellular phones. Even if the Commission were to adopt rules pertaining to the use of wireless equipment on aircraft, airborne use of such equipment will not be permitted unless it is in accordance with FAA rules and requirements. Moreover, the Commission, the FAA, or the airlines could, in modifying prohibitions against the use of cell phones on aircraft, distinguish between voice and data communications in order to minimize nuisance to other passengers.

The Commission also recognizes that law enforcement has filed comments in response to the NPRM indicating that use of cellular telephones and other radio devices onboard aircraft could pose concerns relative to the Communications Assistance to Law Enforcement Act (CALEA) and to homeland security. The Commission will carefully consider these important concerns as this proceeding continues.

Conclusion

The Commission appreciates the interest of this Subcommittee in the current rulemaking related to cellular telephones on aircraft. The Commission's staff will study this matter in light of the comments received concerning the NPRM. This concludes my testimony, and I am pleased to answer any questions Members of the Subcommittee may have at this time.



Testimony before the House Subcommittee on Aviation  
**"Cell Phone on Aircraft: Nuisance or Necessity"**  
 July 14, 2005

**Greeley Koch**  
 President  
 Association of Corporate Travel Executives (ACTE)

Thank you, Mr. Chairman and members of the Subcommittee for the opportunity to testify on this issue. I am speaking today on behalf of the 2500 members of the Association of Corporate Travel Executives (ACTE), who represent the business travel interests of major corporations as well as the aviation, hospitality, surface transportation, and support industries of the travel sector, in 30 countries around the world. ACTE's primary objective is to promote global corporate growth and stability thorough the science of advanced business travel management. Our association seeks to maximize the corporate return on travel investment, while boosting the productivity and effectiveness of the business traveler on the road.

As you are aware, business travelers derive the most out of their travel time through a number of electronic devices that are an extension of their offices. The cell phone is undoubtedly the most common of these and the lowest common denominator shared by all travelers. The traveling executive, however, uses a cell phone as a source of information vital to the current business at hand or to begin arranging future business. The key word is "business." Judicious use of the cell phone will convert isolated hours spent in flight into productive revenue generating potential, especially on long flights.

Slightly more than half of our members responding to a poll indicated that business travelers would be more productive through cell phone access while in flight. We have yet to assign a dollar value to the number of working hours that could be enhanced by cell phone access in flight, but our initial research indicates it could be in the millions.

While ACTE's message is to encourage the committee to relax the restrictions on cellular phone use en route, I understand there are many diverse opinions regarding these devices. The issue at hand, however, is providing choice. If business travelers can make better use of their time through cell phone access, they should have that option.

Using a cell phone in flight must, of course, come with a high degree of responsibility and consideration for other passengers. I am not insensitive to the concerns of others who predict that airliners will reverberate with the endless musical tones of cell phones, or worse, incessant loud conversations. ACTE recommends that any cell phone use on commercial aircraft require mandatory use of a headset and that cell phones be set for silent ringing in the vibrating mode. The prescribed in-flight use of cell phones could be detailed in a seat-back card, an in-flight magazine, and in the announcement at the beginning of each flight. There may be some transitional hiccups introducing this concept, but these occur with any change in procedures. Eventually, the public is informed and the process becomes standard operating procedure.

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I can assure you that business travelers do not make the kind of social calls that critics fear will flood crowded cabins. It is easy to identify the executives in airports speaking into "Bluetooth" headsets. They are not shouting over the noise in the airport. Furthermore, I believe allowing the use of cell phones en route will accelerate the development of more sensitive technology to mask the noise. This is evident in the difference in cell phones today from those that were available only two years ago. The more sophisticated models are multifunctional microcomputers with better reception. I believe headset and noise-canceling technology for cell phones will continue to evolve, especially if there is a specific market for it.

Noise-canceling electronics for microphones and earpieces are already commercially available for the recreation market. These enable individuals to speak and be clearly understood, in a normal voice tone, against a variety of strong background noises. The cost and availability of these devices will drop as market demand increases. There could even be a profit-generating opportunity for the airlines in having headsets available for purchase or rental on each flight.

Finally, there may be a middle-ground position to take in relaxing the restrictions of in-flight cell phone use. Ninety-two percent of our members responding to a recent survey overwhelmingly indicated that they would favor a move permitting text messaging either via cell phones or Blackberry-type devices, allowing travelers to access critical e-mail while en route. An action of this nature would improve communications for the business traveler, while allowing the communications industry to prepare for a move that must eventually come.

Thank you again, Mr. Chairman.



# Department of Justice

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STATEMENT

OF

LAURA H. PARSKY  
DEPUTY ASSISTANT ATTORNEY GENERAL  
CRIMINAL DIVISION

BEFORE THE

SUBCOMMITTEE ON AVIATION  
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
U.S. HOUSE OF REPRESENTATIVES

CONCERNING

CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY

PRESENTED ON

JULY 14, 2005

**Statement  
of**

**Laura H. Parsky  
Deputy Assistant Attorney General, Criminal Division  
United States Department of Justice**

**Before the**

**Subcommittee on Aviation  
Committee on Transportation and Infrastructure  
United States House of Representatives**

**Concerning**

**Cell Phones on Aircraft: Nuisance or Necessity**

**Presented On**

**July 14, 2005**

**I. INTRODUCTION**

Good morning, Mr. Chairman, Ranking Member Costello, and Members of the Subcommittee. I appreciate the opportunity to join you today to discuss the use of cell phones on aircraft and some of the attendant – and critical -- law enforcement, public safety, and national security issues we hope will be considered carefully. The Department of Justice appreciates this Subcommittee's leadership in examining these issues.

As we all are aware, the "high-tech" age in which we now live is offering, and will continue to offer, tremendous opportunities and efficiencies in communications technology. The use of wireless telecommunications services, in particular, has proliferated in recent years. The Department of Justice recognizes that the ability to use wireless telephones in flight would offer the public tremendous convenience and flexibility. Further, the ability to enhance communications on board aircraft could

significantly increase the capabilities of public safety and homeland security personnel who protect our citizens on those aircraft. To the extent that the availability of commercial in-flight communications services could be utilized by law enforcement and security personnel, such services would certainly benefit national security and public safety.

However, it is an unfortunate reality that despite the tremendous benefits new technologies bring to our society, there are always some who will misuse these technologies for criminal, and sometimes lethal, purposes. It is, of course, no secret that today's terrorists and criminals use cell phones, among other communications devices, to coordinate their illicit activities. The ability to use cell phones for this purpose in the air adds another dimension to terrorists' coordination efforts. If air-to-ground communications service were made available without consideration of public safety and national security, terrorists and other criminals could use such a service to coordinate hijackings or other attacks. They could potentially coordinate by cell phone between a terrorist on an aircraft and an accomplice on the ground, among hijackers located in different sections of the cabin of the same aircraft, or even among attackers traveling on different aircraft.

Because of the realities of today's world, we believe that, if in-flight cell phone use is to be allowed, reasonable steps can and should be taken to minimize risks to our national security and public safety. This hearing is being held as the Federal Communications Commission (FCC) is in the midst of a rulemaking proceeding in which it is considering whether to modify, relax, or remove its current ban on the in-flight use of passenger-owned cell phones. The Department of Justice, joined by the Department of



Homeland Security, has submitted comments on the FCC's proposal. I refer you to those comments for a full discussion of our position; however, I would like to share with you a few of the measures that we believe would make this service safer for all concerned.

## **II. CALEA IN AN AIR-TO-GROUND COMMUNICATIONS CONTEXT**

First, as discussed above, unfortunately we can anticipate that criminals and potentially terrorists will attempt to misuse cell phones onboard aircraft to facilitate their unlawful activities. In such instances, lawfully authorized electronic surveillance is an invaluable and necessary tool for federal, state, and local law enforcement to protect national security and public safety. The Communications Assistance for Law Enforcement Act (CALEA) maintains law enforcement's ability to conduct court-ordered electronic surveillance despite changing telecommunications technologies by requiring telecommunications carriers, including cellular and other wireless carriers, to build into their technologies the capabilities necessary to allow law enforcement to implement court orders for electronic surveillance.

Although CALEA would apply to cellular and other wireless carriers in the context of air-to-ground communications, the Department of Justice has asked the FCC to ensure that CALEA would remain effective in emergency situations onboard aircraft in-flight. For instance, CALEA itself does not prescribe a timeframe within which an intercept order must be provisioned by a provider, and the FCC has previously stated only that carriers should "promptly" provision such orders. Given the nature of both air travel and air-to-ground communications, any historical, terrestrially-based interpretation of the term "promptly" will not be adequate in the air-to-ground context. Therefore, the Department of Justice has asked that, in the context of an air-to-ground interception, the

FCC define “promptly” as “forthwith, but in no circumstance more than 10 minutes” from the moment of notification to the telecommunications carrier of lawful authority to conduct electronic surveillance to the moment of real-time transmission to law enforcement or other authorized government agents.

There is typically a short window of opportunity within which action can be taken to thwart a terrorist hijacking or remedy other crisis situations onboard an aircraft. As documented in the 9/11 Commission Report, for three of the flights that were hijacked by terrorists on September 11, 2001, the amount of time that elapsed between the determination that each airplane had been hijacked and when each airplane crashed ranged from 12 to 27 minutes. Law enforcement needs to be able to maximize its ability to respond to these potentially lethal situations, and having the ability immediately to conduct electronic surveillance is critical in the air-to-ground context where every moment matters.

### **III. NON-CALEA OPERATIONAL CAPABILITIES**

The uniqueness of service to and from an aircraft presents the possibility that terrorists and other criminals could use air-to-ground communications systems to coordinate a hijacking or other attack. For example, the use of cell phones in flight could potentially facilitate a coordinated attack between a person on the aircraft and a person on the ground, persons traveling on different aircraft, and/or persons traveling on the same aircraft located in different sections of the cabin, who could communicate with one another using their personal cell phones.

While the capabilities mandated by CALEA provide invaluable assistance to law enforcement, there are certain additional, but critical, capabilities that are not provided

for by CALEA. Unlike on the ground, in the event of a hostage situation or bombing threat in flight, law enforcement cannot physically surround and penetrate an aircraft moving hundreds of miles per hour through the air. In such situations, obtaining knowledge about onboard communications and maintaining and exercising control over those communications become critically important for law enforcement and can influence time-sensitive decisions about how to respond to the threat.

Therefore, in order to maximize law enforcement's efficacy, the Department of Justice and Department of Homeland Security have requested that, if the FCC allows air-to-ground cell phone service, it require certain operational capabilities for such service. These additional capabilities include, for instance, the ability expeditiously to:

- (1) Provide the seat number or general location of onboard cell phone users;
- (2) Interrupt, redirect, and/or terminate cell phone calls;
- (3) Identify the destination of all communications originated from wireless phones on such an aircraft; and
- (4) Identify the origin of communications directed or terminated to wireless phones located on that aircraft.

#### **IV. POSSIBLE INCREASED RISK OF THE USE OF RADIO-CONTROLLED IMPROVISED EXPLOSIVE DEVICES AS A RESULT OF CONNECTIVITY TO AIRCRAFT**

Another area of concern for law enforcement, public safety, and national security is the risk that a terrorist could use a communications device as a remote-controlled improvised explosive device (RCIED). Although we recognize that the potential for terrorists to do this already exists, the risk of RCIED use may, at least in theory, be

increased as a result of the ability of aircraft passengers now to use effectively personal cell phones in flight. The ability to turn on a wireless phone located onboard an aircraft and have that phone connect to wireless service or reach a communications carrier's network — which was not previously possible in a reliable way — presents the potential that either a passenger or someone on the ground could *reliably* remotely activate a wireless phone or device in-flight and use it as an RCIED.

Clearly, the greatest impediment to the use of wireless phones and similar communications devices as RCIEDs is to prevent them from being brought onboard aircraft in the first place. Although advanced screening techniques are in place to assist in that mission, those techniques are not absolute. Therefore, we have asked that the FCC and carriers consider ways to mitigate this potential increased risk, including:

- (1) A user network authentication and seat-registration requirement for in-flight use of personal cell phones;
- (2) Strong network security controls for communications equipment onboard aircraft; and
- (3) Design mechanisms that will deny network access and connectivity to devices stored in the cargo hold.

#### **V. WIRELESS IN-FLIGHT SERVICE AND ITS POTENTIAL IMPACT ON PASSENGER CONDUCT**

In recent months, there has been significant media attention given to the effect that in-flight wireless phone use will have on the overall atmosphere of flights and the conduct of passengers. In particular, we note the concerns expressed by flight attendants, pilots, and other members of the flying public that the unrestricted use of cell

phones by multiple passengers on flights could result in an increase in “air rage” incidents.

The Department of Justice is concerned that the conduct of passengers making use of personal cell phones in flight could have implications for federal law enforcement onboard aircraft whose mission and status is unknown to fellow passengers. We believe that affirmative measures should be adopted to diminish the probability that law enforcement’s onboard mission will either be complicated or compromised unnecessarily by disputes concerning in-flight cell phone use. For this reason, we have recommended that the FCC, in consultation with the airlines, establish rules and/or policies concerning in-flight personal wireless phone use to minimize any potential for the increase in air rage incidents that could result from their unrestricted use.

#### **VI. CONCLUSION**

Mr. Chairman and Members of the Subcommittee, thank you again for the opportunity to testify today and for your attention to the important national security, law enforcement, and public safety issues related to the use of cell phones in flight. We look forward to working with you and the FCC to address these issues going forward. At this time, I’d be happy to answer any questions you may have.

**OPENING STATEMENT OF  
THE HONORABLE JAMES L. OBERSTAR  
AVIATION SUBCOMMITTEE  
CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY?  
JULY 14, 2005**

I want to thank you, Chairman Mica and Ranking Member Costello, for calling today's hearing to examine the potential use of cellular telephones and other personal electronic devices (PEDs) on airborne aircraft. This hearing is timely, considering the Federal Communications Commission's (FCC) proposal to relax its ban on using cell phones on airborne aircraft. I believe that before we rush headlong into expanding the allowable uses of cell phones and other PEDs during flight, we must consider both the safety and the social consequences of changing the current regulations.

Current FCC and Federal Aviation Administration (FAA) regulations prohibit the use of cell phones while on board U.S. registered aircraft because of the potential for electromagnetic interference with ground based cellular networks as well as aircraft communication and navigation systems. FAA regulations also prohibit the use of other PEDs aboard aircraft. In December 2004, the FCC issued a notice of proposed rulemaking to begin to address policy and technical options for permitting controlled airborne operation of "off the shelf" cellular telephones to be used during flight. One such technical option is the use of pico cell technology, which is an onboard base station that would collect signals from airborne cell phones, and

perhaps other wireless devices, and transmit them to a specialized ground-based cellular network or a satellite system.

Importantly, any measures the FCC takes with respect to cellular phones on airborne aircraft remain subject to FAA rules as well as policies of individual aircraft operators. It is my understanding that the FAA has no intention of changing its rules regarding the use of cell phones or other PEDs on aircraft. However, the FAA has procedures to allow, on a case-by-case basis, air carriers to submit applications to certify wireless devices for use onboard aircraft, so long as the carrier can prove that the devices will not cause interference with the aircraft's navigation systems. To date, FAA has approved an application submitted by United and Verizon to install a Wi-Fi system, which provides Internet access and has the capability for voice over Internet protocol, for United's B-757-200 aircraft. The FAA has also asked the Radio Technical Commission for Aeronautics (RTCA) to explore whether modern wireless technology continues to pose a danger of interfering with aircraft radio and navigation systems. I look forward to hearing from the FAA and the FCC about their respective work on these issues.

It appears that those advocating easing the ban on wireless electronics favor data and text messaging, not chit chatting on flights. Many groups, including flight attendants and certain members of the wireless industry, have publicly advocated

against lifting the cell phone ban in particular, both on a safety basis, including the potential increase of “air rage” incidents, as well as for social issues. Some critics have also questioned the maturity of pico cell technology, arguing it may actually increase the possibility of radio frequency interference.

Moreover, the Department of Homeland Security (DHS) and the Department of Justice (DOJ) have raised important security concerns in their comments on FCC’s proposed rulemaking. Among their concerns are the potential increase for wireless communications to be used as remote-controlled improvised explosive devices, and the concern that federal law enforcement officers’ missions may be compromised to deal with air rage passengers. I look forward to hearing DOJ’s analysis of national security implications that may result from lifting the wireless device ban.

I look forward to hearing all of the witnesses’ thoughts on the use of wireless devices on airborne aircraft.



Statement of Rep. Jon Porter (R-NV)  
House Transportation and Infrastructure Committee  
Subcommittee on Aviation  
July 14, 2005

Mr. Chairman, I thank you for holding this hearing today on the use of cell phones on airplanes.

This hearing should provide us with an understanding of the impact on public safety, national security and social implications of the Federal Communication Commission's proposed rule that reverses long-standing regulations on the use of cellular telephones and similar wireless communications devices onboard aircraft during flight.

Mr. Chairman, since 1991, FCC regulations have prohibited the use of certain cellular phones and wireless communications devices on aircraft out of concern that such devices interfere with ground-based cellular phone networks.

Federal Aviation Administration regulations currently prohibit the use of cellular phones, wireless communications devices and other portable electronic devices with radio transmitters, including our much beloved BlackBerry device, while onboard U.S.-registered civil aircraft because of concerns related to interference with aircraft communications and navigation equipment.

Due to this overlapping jurisdiction, any change to the existing ban on aircraft cell phone use would require the approval of both the FAA and FCC.

In December 2004, the FCC issued a Notice of Proposed Rulemaking (NPRM) that would effectively allow the use of cellular phones and wireless communications devices on aircraft. The FCC hopes to issue a final ruling in 2006, stating that its ultimate objective is to allow consumers to use their own wireless devices during flight.

Even if the FCC finalizes its proposed rule lifting its ban on aircraft cell phone use, it is my understanding that the FAA has no intention to lift its long-standing ban on the use of cellular phone and wireless communications devices.

The FAA recently certified two new communications technologies for use on commercial aircraft. The first is a pico cell network

developed by Qualcomm and the second is a high-speed wireless Internet service developed by Verizon and United Airlines for use on board B-757-200 aircraft.

A pico cell is a special, smoke detector-sized transmitter that would collect all wireless signals from airborne cell phone calls and transmit them directly to a specialized ground-based cellular network or a satellite-based network.

Pico cell systems are equipped with a control panel that would allow the flight crew to control the type of communications services depending on the policies set by the airline, including safety considerations.

The FAA recently approved a WiFi system for B-757-200 aircraft developed by United Airlines and Verizon. In addition to providing Internet access, this technology is capable of Internet telephony, or VoIP, which may be a viable built-in alternative to using a cell phone aboard the aircraft.

The main disadvantage of the WiFi-based systems versus pico cell systems is installation cost. WiFi service costs approximately \$500,000 per aircraft, compared to \$100,000 for a pico cell system.

Mr. Chairman, I thank the witnesses for being here and look forward to their testimony. I yield back.

STATEMENT OF NICHOLAS A. SABATINI, ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY, FEDERAL AVIATION ADMINISTRATION, BEFORE THE SUBCOMMITTEE ON AVIATION, COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, U.S. HOUSE OF REPRESENTATIVES, ON CELL PHONES ON AIRCRAFT: NUISANCE OR NECESSITY.

JULY 14, 2005

Mr. Chairman, Mr. Costello and Members of the Subcommittee:

It is a pleasure to be here this morning to review for the Subcommittee the Federal Aviation Administration (FAA) policy and rules regarding the use of portable electronic devices (PEDs), including cell phones, on aircraft and how those may be affected by a proposed rulemaking by the Federal Communications Commission (FCC) to relax their ban on the use of certain cell phones on aircraft. I welcome the opportunity to appear here today with my colleagues from the FCC, and the Department of Justice (DOJ), to discuss our respective roles and responsibilities, as well as with my colleague from the RTCA, Inc., whose organization has greatly contributed to the understanding of the operational effects of PEDs.

Before providing you with a brief outline of responsibilities, I would like to emphasize at the outset that, regardless of the final outcome of the FCC's proposed rulemaking, the FAA's safety regulations regarding portable electronic devices onboard aircraft will remain in place.

In order to prevent potential interference with aircraft communications and navigation equipment, the FAA has regulations<sup>1</sup> that prohibit the use of portable electronic devices,

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<sup>1</sup> See 14 C.F.R. 91.21, 121.306, 125.204, 135.144).

with some limited, specified exceptions, onboard a U.S. air carrier aircraft or any other U.S. registered aircraft operating under instrument flight rules (IFR). The specific exceptions to the rule are for portable voice recorders, hearing aids, heart pacemakers, and electric shavers. Use of those devices is allowed. Our regulation also provides an additional, more general, exception one that is relevant to today's discussion: if an aircraft operator has determined that a portable electronic device will not interfere with the navigation or communication systems of the aircraft on which the PED will be used, the operator may permit use of the PED onboard that aircraft. This general exception sounds deceptively simple, but I assure you it is quite complex in this era where the old cable and pulley flight control systems on many aircraft have been replaced by modern "fly-by-wire" aircraft equipped with analog and digital technology that translate pilot control input to the aircraft control surfaces electronically (wires / circuit boards). These advanced avionics depend on clear signal communications onboard aircraft. Air carriers routinely provide information to the FAA about their electromagnetic studies.

We commissioned a Federal Advisory Committee under the auspices of RTCA, Inc., to study radio frequency emission and interference issues. During the first phase of their study, they issued a report in 1996 as well as procedures for air carriers to use in making a determination about whether a PED interferes with onboard navigation or communication systems. The RTCA is continuing to investigate the use of new technologies onboard aircraft and we expect this phase to extend to the end of next year. My colleague here today will provide more details about their work with not only the FAA, but with the aviation community and the PED industry.

To understand the issues that PEDs pose for the aircraft environment and, therefore, the underlying reason for our safety regulations, one needs to understand the basic problem: electromagnetic interference. All electronic devices send out electromagnetic waves. The power and frequency of these waves depends on the type of device and its physical condition; that is, whether it's been damaged or repaired or "souped up." PEDs can be categorized more simply into two kinds: intentional and unintentional transmitters. Intentional transmitters work by using radio signals to talk or transfer data to another device or service provider. These are devices such as cell phones, two-way pagers, wireless modems, built in WiFi devices<sup>2</sup>, remote control toys, walkie-talkies and many other things. Basically, if the device "talks" to another device without physically being connected by a wire, it is probably an intentional transmitter. *Unintentional* transmitters are all other electronic devices, which include such things as electronic games, laptop computers and Personal Data Assistants (PDAs)—at least the ones that do not use wireless technologies. Unintentional transmitters give off electromagnetic waves whenever they operate. The power level of these waves vary depending on the device and complexity of the device's circuitry.

Modern avionics on aircraft transmit and receive radio signals to communicate with onboard systems, with other aircraft, air traffic control and ground stations. These onboard systems are used for navigation, communication, surveillance, and security and can be affected by the radio signals or electromagnetic waves transmitted intentionally or unintentionally by PEDs. The chance of this occurring is greater with intentional

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<sup>2</sup> For example, an 802.11 ethernet card, or a Bluetooth wireless device, or Blackberry.

transmitters such as cell phones. Additionally, radio signals originating external to an aircraft may combine with signals produced inside the cabin, resulting in a higher probability of interference to the aircraft avionics or flight control systems. To prevent possible interference affecting an aircraft's navigation and communication systems during the critical phases of flight, such as take-off and landing (e.g. when the aircraft is below 10,000 feet), we recommend that air carriers prohibit the operation of any PED (including cell phones) during these times<sup>3</sup>.

Cell phones are different from other PEDs on aircraft in that they can interfere with the cellular networks on the ground. For this reason, in 1991, the FCC issued a rule that prohibited the use of certain cell phones on aircraft during flight. As I understand it, under the FCC rules, while an air carrier may permit passengers to use their cell phones while an aircraft is on the ground, passengers must turn off their phones once the aircraft has left the gate.

As my colleague will testify this morning, the FCC now believes that, with advances in cell phone technology since 1991, their rule banning 800 MHz cell phone use in flight, may not be needed in order to protect the terrestrial or ground based cellular networks. In February, they published an NPRM that proposed to lift the ban on the use of 800 MHz cell phones while airborne if such phones are operating at their lowest frequency power under control of onboard equipment, e.g. a "pico cell," which is installed on the aircraft and acts as a controller for onboard callers. In this scenario, the pico cell would manage the power levels of the cell phones that would potentially solve the FCC's concern with

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<sup>3</sup> See the FAA Advisory Circular 91.21-1 that accompanies our safety rule.

interference with ground-based cell phone communications. We are not aware of any current technology that restricts emissions to the confines of the particular aircraft with such an installation.

The FAA and the FCC coordinated closely during the development of the FCC's proposed rulemaking action so that the public would be apprised of our respective roles. The FAA supports the FCC's action in examining these issues and seeking public comment. The NPRM notice clearly notes throughout the document that whatever the outcome of the FCC's proposal, use of cell phones onboard aircraft is still subject to FAA's safety regulation and air carrier policies. This rulemaking action by the FCC has generated substantial public comment, and I will defer to my colleague to review for you the proposal and the status of their action.

What I do want to emphasize is that the FAA is not changing its rules. We will certainly continue to work with the FCC and any other agencies that have roles to play to ensure that the public is well aware of the prerequisites for using cell phones or any other PED while in flight. If an air carrier elects to permit cell phone usage (or other PED) onboard during flight, they must determine that the use of that *particular* model phone won't interfere with the navigation or communication systems onboard the *specific type of* aircraft on which the phone will be used. That's a substantial challenge with ever-changing cell phone technology on the one hand, and, on the other, increasingly advanced and complex aircraft technology as the national airspace system moves to satellite

navigation. The Global Positioning System (GPS) is a critical enabler of new procedures and must be protected from increased background noise as well as direct interference. The GPS received signal is at a very low level. The proper operation of GPS receivers can be disrupted by a relatively low level signal generated by an undesired signal source. Nevertheless, if an air carrier is willing to take the time and incur the expense of testing and verifying that the cell phone usage presents no in-flight interference problems, our rules allow an air carrier to permit such devices.

Most airlines now prohibit the use of intentional transmitters such as cell phones during flight. However, we have recently worked with a couple of carriers who have allowed the use of PED technology under our rule on certain aircraft. The first instance involved a proposal by American Airlines and Qualcomm for a one-time test in July 2004 of the use of a Qualcomm cell phone onboard a Boeing MD-80 aircraft with a pico cell that was brought on board for the test (i.e. it was not permanently installed on the aircraft). The test was successful in that it provided data for the airline and the cell phone providers to analyze and further study. For example, it showed that the pico cell would control the strength of cell phone emissions but that it would only allow so many people onboard to use their cell phone at any one time due to the capacity limit of the pico cell. In the second instance, last month we approved the installation of equipment that will allow United Airlines and Verizon to permit the use of WiFi wireless internet connection onboard Boeing 757 aircraft during flight after the aircraft reaches cruising altitude. Under this system, a passenger may use a laptop computer or other device with an 802.11 ethernet card to connect to a server onboard the aircraft that directs the communication to



a ground-based internet provider. Using this technology, a passenger could not only surf the internet but could also use a voice-over internet protocol (IP) connection with a headset to make phone calls over the internet. Also, we understand that Airbus, last September, demonstrated an airborne pico cell using the European GSM mobile phone technology on an Airbus A320.

It remains to be seen if carriers will seek approvals for use of more PEDs on other types of aircraft. Should the FCC relax its rule regarding the use of 800 MHz cell phones, it could provide an impetus for air carriers to permit the use of a variety of cell phones (or other PEDs) in flight. If that's the case and if an air carrier has met our safety requirements, the carrier may permit such use, with procedures to help passengers be aware of exactly what phones may be used and under what conditions.

We will also closely monitor what potential effects that wider use of cell phones or other PEDs in flight might have on new satellite navigation procedures and aircraft capabilities to take advantage of such procedures. That means we have to be careful to protect the more advanced onboard technology from harmful interference from PEDs. For example, there is potential that such interference could reduce the number of GPS satellites that an aircraft could "see" and therefore reduce the accuracy of the GPS signal. The FAA takes this into consideration in requirements for the GPS accuracy expected for navigation procedures. The navigation procedures are also designed with missed-approach procedures for alternative navigation capability.

This potential to provide passengers with new communication technologies also raises the issue of what FCC Commissioner Copps refers to as the “annoying-seatmate issue.” This is largely a social issue, albeit one with potential safety implications. Other modes of transportation are also dealing with the issue of cell phone use by passengers. For example, Amtrak designates “quiet cars” for passengers who do not want to be disturbed by cell phones.

We expect that air carriers will have to sort this out, weighing the pros and cons—but inflight cell phone use could also present unique safety and security concerns. DOJ is here today to address the security aspects of this issue. We will continue to work with our colleagues as these issues are examined. What effect in-flight cell phone use may have on pilot workload or interference with a flight attendant’s safety duties due to incidents of passenger “air rage” is an unknown at this point. However, it’s not hard to imagine a scenario where use of cell phones by several passengers in the confined space of an aircraft cabin could lead to conflicts. We are concerned that, should cell phone use be permitted, flight attendants might be distracted from their critical safety duties and responsibilities if they are increasingly required to deal with irate passengers. This will be one of the issues that we will continue to assess and monitor if cell phone technology proliferates onboard aircraft.

Mr. Chairman, I trust this information about our program is helpful. Safety is the FAA’s highest priority and we will continue to enforce and maintain our regulatory oversight on the use of all PEDs, including cell phones, onboard aircraft.

That concludes my testimony. I would be happy to answer any questions that you or the other Members of the Subcommittee may have.



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STATEMENT OF

DAVID S. WATROUS

President, RTCA, Inc.

PRESENTED TO

THE SUBCOMMITTEE ON AVIATION

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

U. S. HOUSE OF REPRESENTATIVES

WASHINGTON, D.C.

July 14, 2005

“Cell Phones on Aircraft: Nuisance or Necessity”

Good morning Mr. Chairman and Members of the Aviation Subcommittee. I am David Watrous, President of RTCA, Inc. Thank you for the opportunity to appear before you today on the subject of Portable Electronic Devices (PEDs) – particularly cell phones and similar portable electronic devices.

**Scope of Remarks**

RTCA’s work, and my remarks, will center on the potential for portable electronic devices ... specifically PEDs that intentionally transmit signals ... to interfere with the safe operation of aircraft electronics. Some Portable Electronic Devices also have the potential to interfere with ground-based telecommunications. That aspect of Portable Electronic Device operation is primarily the domain of the FCC. FCC representatives are participating in our current PED analyses, however PED interference with ground based telecommunications has not been the focus of our work and therefore is not a subject on which I am prepared to speak.

**Objective of RTCA’s Current PED Work**

From an aviation perspective, the airborne on-board use of cell phones and similar devices can be characterized as a trade off of safety versus convenience. Aviation safety is always paramount. That said, RTCA is working to find ways that cell phones can be safely operated on board aircraft that are in flight. The community has a concept for

achieving that objective. We're collecting test data and plan to have our recommendations available for FAA by December 2006.

### **RTCA Background**

A few words about RTCA may be of value in setting the stage for my remarks.

RTCA is a not-for-profit corporation that was organized in 1935 to address aviation electronics issues. We are a utilized Federal Advisory Committee. Our deliberations are open to the public and our products are recommendations, developed by Special Committees of volunteers ... mostly engineers ... functioning in a collaborative, peer review type of environment. FAA uses our recommendations as a partial basis for the certification of avionics. Other government and private sector entities use our products when making a variety of aviation related decisions.

### **Aviation Safety and Portable Electronic Devices**

As you know, safety is the primary consideration in civil aviation. US aviation has an absolutely outstanding safety record. That's extremely important ... to the nation, to the passengers and shippers who use the system and to the aviation industry. We must sustain or improve on our record.

That said, portable electronic devices ... especially those portable electronic devices that intentionally send out signals such as cell phones... have the potential to interfere with avionics. I'll illustrate the potential safety ramifications of PED interference in the context of aircraft radios used to navigate the plane.

### **Nature and Impact of Potential Interference**

The risk from interference with navigation signals is highest when the plane is close to the ground ... when it is taking off or landing in bad weather or whenever the pilots' visibility is limited. Events happen very fast when the aircraft is traveling at roughly 200 miles per hour and is a few hundred to a few thousand feet above the ground. In those circumstances, pilots totally depend on information from avionics ... avionics that must accurately receive and process radio signals ... to fly the aircraft and make a safe departure or landing.

All portable electronic devices have the potential to interfere with radio navigation signals, even though such interference is unintentional. The interference can prevent the reception of the radio signals or worse yet, can distort the signals. In the latter case, the pilot would think that he / she is flying the plane to a safe landing when in fact the corrupted signals could potentially be guiding the plane toward a nearby mountain, tower or building.

PED induced interference can also be a problem when aircraft are en route, well above the ground. However, in this scenario, pilots and controllers have more time to detect the

problem, to have all potential offending PED devices turned off or to pursue an alternate means of getting the aircraft safely on the ground.

### **RTCA Analyses of Potential PED Induced Interference**

RTCA committees have addressed the potential of PED induced interference four times over the last four decades. On each occasion, the committee focused on the emerging consumer electronics technologies of their day.

During the middle 1960s, RTCA Special Committee 88 focused on early transistorized electronics ... hearing aids, portable dictating and recording devices, portable radio and television receivers. During the late 1980s Special Committee 156 addressed potential interference from laptop computers, games, increasing numbers of AM and FM radio receivers and television receivers. By the mid 1990s, Special Committee 177 was looking at the potential interference from smaller, faster processors in laptop computers; games; AM, FM and television receivers; early cell phones; CD Players and the impact that they could have on newer avionics that make use of Global Positioning System (GPS) signals.

Each of these committees concluded that electronic devices, especially digital electronics, have the potential to emit radio frequency signals that, in turn, may interfere with sensitive aircraft communications, navigation and control systems. Thus their use onboard aircraft needs to be carefully controlled so that potential PED generated interference does not adversely impact the safety of aircraft operations.

There are two primary considerations attendant with potential PED induced interference; 1) the nature and relative power of the PED signal; 2) the design, production and use of PEDs.

An example may help illustrate the relative power consideration. Airplane satellite navigation receivers are designed to look for and work with the faint signals from far-away satellites. The signal from a passenger-carried electronic device, albeit transmitting a small signal but being transmitted much closer to the airplane navigation receiver, has the potential to overwhelm the desired satellite signal. In a similar vein, PED signals have the potential to corrupt navigation signals and lead to erroneous navigation information.

There are also fundamental differences in the design approval and use of avionics vis-à-vis portable electronic devices.

Avionics and flight control components, wiring, and systems are rigorously tested and qualified before they can be certified for aircraft installation and use. These items cannot be certified if they interfere with any systems needed to fly the airplane. The parts are manufactured in accordance with a documented and verifiable production process, then produced via a controlled process to assure the characteristics of each part meet aviation

certification standards. When installed, these items are operated by trained professional crews.

Portable Electronic Devices are not qualified to the same standards. Changes to production line processes can result in differing characteristics among otherwise similar units. Furthermore, PED users generally are not familiar with the operating parameters of their hand held device or the potential hazards of operating their PEDs when airborne.

#### **RTCA's current PED activity**

RTCA's current Special Committee, SC-202, is primarily focused on analyzing potential interference from PEDs that intentionally transmit signals. Cell phones are the most obvious type of transmitting PED and they are the center of the committee's work. Some PDAs can also function as cell phones and their potential to interfere with avionics will also be addressed.

Special Committee 202 is led by Mr. David Carson of the Boeing Company and Mr. James Fowler of US Airways. The committee includes approximately 150 members from essentially every segment of the aviation and consumer electronics communities: avionics manufacturers, aircraft manufacturers, airlines, aircraft operators, pilot and flight attendant associations, regulatory agencies, consumer electronic device manufacturers and related industry associations. The committee works closely with other industry groups such as the Consumer Electronics Association. Our committee's work is also coordinated closely with similar analyses on-going in Europe [EUROCAE Working Group 58]. Our Special Committee 202 is developing a consistent, common, documented process to:

- Assess the impacts that transmitting PEDs can have on the aircraft operation
- Develop strategies to mitigate identified potential interference, and
- Work with regulatory authorities to approve safe use of transmitting PEDs

Testing accomplished by the aviation industry has shown the potential for cell phones to cause interference to avionics. Through airplane testing and documented process validation, the committee is replacing anecdotal understanding with facts, data, and repeatable processes. Only when consistent, common and repeatable testing has been accomplished to identify interference potentials and corresponding mitigation steps completed, can the aviation community confidently permit the use of any type PED.

With the help of the FAA and FCC, our Special Committee is developing recommended acceptable and enforceable policies that maintain or improve aviation safety and accommodate the growing desire by passengers to use wireless technologies on the airplane.

Thank you for the opportunity to testify on this important and contemporary topic. I'd be pleased to address your questions.

SENT VIA FACSIMILE

*Association of Professional Flight Attendants*

July 14, 2005

The Honorable John Mica  
Chairman  
Subcommittee on Aviation  
U. S. House of Representatives  
Fax no. 202-225-4629

The Honorable Jerry Costello  
Ranking Member  
Subcommittee on Aviation  
U. S. House of Representatives  
Fax no. 202-225-5759

**Re: Hearing on Cell Phones on Aircraft**

Dear Chairman Mica and Ranking Costello:

On behalf of the Association of Professional Flight Attendants (APFA) representing 24,000 Flight Attendants at American Airlines, we would like to take this opportunity to express our concerns regarding the potential use of cell phones while in flight. The APFA believes that cell phones will cause problems in the aircraft in multiple ways.

**Interference With Flight Attendants Duties:**

The primary role of a Flight Attendant on any flight is to ensure the safety of the passengers while on the aircraft. The usage of cell phones in flight may enhance passenger convenience but the APFA strongly believes it would interfere with Flight Attendant's performing their safety duties. Numerous Flight Attendants reports to our office support this position. Our Flight Attendants are experiencing a marked increase in "Passenger Misconduct events" due to passengers not wanting to turn off their cell phones prior to the aircraft leaving the gate and during the critical stage of taxi-out.

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In addition, Flight Attendants are required to personally conduct exit row briefings for passengers who are seated at designated emergency exits and get verbal acknowledgment by each passenger in the exit row. The purpose of this briefing is used to heighten the awareness of those passengers if they are needed or called upon to operate that exit should an emergency evacuation be initiated. A passenger talking on a cell phone during this briefing or during an emergency has a potential "life threatening" impact for those seated around him/her and there have been incidents in which the overwing exits were the only useable exits from the rear of a burning aircraft. In the event of an evacuation, every second counts.

The possibility of cell phone usage during flight would further distract passengers from pertinent safety announcements made inflight. Turbulence warnings and announcements requiring passengers to fasten their seat belts are routinely made. Passengers talking on cell phones would be distracted and probably miss the announcement. A Flight Attendant attempting to intercept an oblivious passenger who has gotten up in the aisle would expose both the passenger and the Flight Attendant to possible injury and harm.

In the event of a pre-known, possible emergency landing, on the ground or in the water, Flight Attendants are trained to prepare the aircraft cabin for emergency. In the cabin preparation, crew members require the attention and participation of ALL passengers. Critical, life saving information is conveyed. Disruption of any kind, especially by a cell phone, would greatly interfere with the briefing. The addition of the use of cell phones on board would take time and attention away from the Flight Attendants primary duties -- time and attention that would need to be on preparing the cabin for landing and NOT policing cell phone usage.

#### **Interference With Cockpit Equipment:**

Concerns remain that cell phone usage may interfere with the aircraft avionic equipment. A report issued by the Civil Aviation Authority (CAA) on April 30, 2003 entitled "Effects of Interference from Cellular Telephones on Aircraft Avionic Equipment" listed various aircraft equipment that showed anomalies with interference levels produced by cell phones and located within 30cms of the equipment. The list includes:

- Compass froze or overshot actual magnetic bearing.
- Instability of indicators.
- Digital VOR navigation bearing display errors up to 5 degrees.
- VOR navigation TO/From indicator reversal.
- VOR and ILS course deviation indicator errors with and without a failure flag.
- Reduced sensitivity of the ILS Localiser receiver.
- Background noise on audio outputs.

In its recommendations, the report stated, "The results of the tests endorse current policy that restricts the use of cell phones in aircraft." While, no doubt, technical advances have been made in the last few years to address some of these problems, the APFA advises great caution. Boeing Aircraft and others are beginning to offer Internet service on board flights more than six hours. When and if this service is extended to cell phones, Flight Attendants will need some

ability to determine if the wireless is using the on board system or linking directly to its carrier and possibly interfering with the cockpit instruments.

**Security Concerns:**

Since the events of September 11, 2001, articles in the mainstream press have explored new technologies that terrorists have used. Terrorists could easily use cell phones to communicate with one another inflight and on the ground. Furthermore, cell phones have also been reported as being used as explosive devices or detonators for such devices. By allowing cell phones to be used inflight, the potential for sabotage increases.

As recently as yesterday (July 13, 2005), the Washington Post had an article entitled "Enhanced In-Air Internet Surveillance Sought" revealing efforts by federal law enforcement agencies as they pursue enhanced surveillance powers over Internet service on aircraft. (Article attached.) The FBI, Department of Justice and Department of Homeland Security have concerns that the Internet may be used by terrorists to communicate and are proposing means to intercept, block or divert messages as well as identify users by seat number. The article mentions the possibility of using the Internet to activate explosives which is also a possibility with cell phones. These agencies may succeed in being able to intercept emails but surveillance of phone calls would be more far more complex.

APFA takes the position that the ramifications and possible consequences resulting from allowing passengers to use cell phones could be hazardous. We do not support this passenger convenience to the detriment of passenger safety.

Thank you for allowing us to submit our comments. Please feel free to contact me at 800-395-2732 Ext. 8302 or APFA Washington Representative Joan Wages at 703-548-3676 with questions.

Sincerely,



Lommy Glover  
APFA National Safety Coordinator

(1) Attachment

**Enhanced In-Air Internet Surveillance Sought**

By Jonathan Krim

Federal law enforcement agencies are seeking enhanced surveillance powers over Internet service on airplanes, an effort to shape an emerging technology to meet the government's concerns about terrorism.

Authorities want the ability to intercept, block or divert e-mail or other online communication to and from airplanes after obtaining a court order. Internet providers would have to allow government monitoring within 10 minutes of a court order being granted, be able to electronically identify users by their seat numbers and be required to collect and store records of the communications for 24 hours.

Such capabilities would go far beyond the government's current ability to monitor Internet traffic on land.

The FBI, Department of Justice and Department of Homeland Security jointly made the requests in a filing last week with the Federal Communications Commission, which is examining mostly technical changes to rules for satellite-based Internet services in hopes of spurring more deployment on airplanes. The service is available on some international airlines, but domestic carriers have not yet launched it.

The law enforcement agencies say they support giving travelers the ability to surf the Web and communicate via e-mail or instant messaging in the air but also fear that terrorists could use the services to coordinate an attack among themselves on a single plane, between aircraft or with people on the ground. The government also fears terrorists could use Internet-connected devices to detonate explosives via remote control.

"There is a short window of opportunity in which action can be taken to thwart a suicidal terrorist hijacking or remedy other crisis situations aboard an aircraft, and law enforcement needs to maximize its ability to respond to these potentially lethal situations," according to the filing, which was first reported by Wired News.

The petition comes at a time of ongoing controversy over how deeply security agencies should be able to penetrate private life in efforts to protect against terrorism.

"It does sort of make your head snap back," said James X. Dempsey, executive director of the Center for Democracy and Technology, a digital rights policy group. "Basically this is the full ability to control all communications into and out of" a particular spot.

Congress is wrestling with competing plans to renew the parts of the Patriot Act that expire at the end of the year. Civil liberties advocates say the law, which passed shortly after the 2001 attacks, is overly intrusive and want it scaled back, while law enforcement and the Bush administration want it renewed and in some ways expanded.

One proposal, passed by the Senate Intelligence Committee last month, would make it easier for the FBI to open mail and issue subpoenas without a judge's approval in terrorism probes. A House panel, meanwhile, voted to limit the FBI's ability to seize library and bookstore records during terrorism investigations.

For more than a year, the FCC has been separately considering whether companies that provide Internet access and carry Web traffic should be required to build surveillance capability into their networks.

Telecommunications carriers are required to do so under the 1994 Communications Assistance for Law Enforcement Act, and law enforcement agencies argue that the same standard should apply to any type of Internet communication, whether via cable lines, wireless, satellites or other technologies.

But the petition for in-flight rules goes well beyond the provisions in that 1994 law.

For example, Internet providers currently are not required to capture and store logs of Internet communications on their networks, which can carry hundreds of millions of e-mails per day.

Dempsey said the proposals -- such as the ability to disable the Internet use of some passengers while maintaining it for law enforcement or airline personnel on a plane -- amount to government-mandated design of the technology.

And if the proposals are approved, he said, he would expect law enforcement to argue that the same capabilities are needed on land.

A spokesman for the Justice Department said the agencies would not comment on the proposals pending congressional testimony scheduled for tomorrow by Deputy Assistant Attorney General Laura H. Parsky.

The business of providing Internet service on airplanes is just taking shape. Boeing Co. is the largest worldwide provider, but competitors are beginning to emerge, with Europe's Airbus SAS and Germany's Siemens AG announcing a partnership this week to create a similar service.

Boeing will abide by any government rules, company spokesman Terrance Scott said. But he added that the company questions whether the FCC's technical review of satellite services is the proper venue for examining surveillance rules, rather than Congress or the courts.

He said Boeing is still evaluating how much it would cost to comply with the proposed rules as well as the impact on the airlines and customers. Expense remains an issue for many U.S. carriers in deciding whether to offer the service, Scott said. The airlines split installation costs with Boeing and then share in revenues.

The Boeing Connexion service currently ranges in price from \$9.95 for one hour to \$29.95 for flights longer than six hours, Scott said. Customers sign on to and use the system in much the

same way as commercial services provided at outdoor cafes, in airline terminals or other wireless "hot spots."

Much of the world is covered by satellites that transmit the signals, although some areas such as Australia and the South Pacific lag behind.

To date, Scott said, the service is not profitable.

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**Statement of Cingular Wireless Regarding  
House Subcommittee on Aviation Hearing on  
Cell Phone Use Aboard Aircraft  
July 14, 2005**

The Federal Communications Commission is seeking comment on a proposal to relax its ban on the use of cellular telephones and other wireless devices aboard aircraft. In this proceeding, Cingular Wireless has expressed concerns that the in-flight use of cellular devices by airline passengers will cause interference to cellular networks on the ground, thereby negatively affecting wireless service for customers. Cingular also notes that the Federal Aviation Administration, with assistance from the Radio Technical Commission for Aeronautics, is still assessing the potential for interference to aircraft navigation systems. Cingular is confident that these and other significant interference- and safety-related issues, including how and whether the use of pico cells aboard aircraft may provide a solution to interference to ground-based networks, will be thoroughly examined before a decision is made.

Should policymakers conclude their review by deciding to ease the ban on airborne cellular usage, many airline passengers will likely object to the idea of hearing cell phone chatter in flight. Though Cingular, the nation's largest wireless carrier, has a financial interest in furthering voice usage by its subscribers, the company agrees that there is a time and place for cell phone conversations, and seldom is that within the confines of an airplane flight. As a result, if airborne cellular use is allowed, Cingular will urge passengers to "tap not talk" -- that is, to use discreet services such as text messaging and email as opposed to voice communications in flight. This is a natural extension of Cingular's "Be Sensible" campaign<sup>1</sup>. Moreover, Cingular would welcome the opportunity to work with appropriate regulatory agencies, airlines, and other stakeholders to develop a consumer outreach and education initiative on this topic.

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<sup>1</sup> Launched in 2001, Cingular's "Be Sensible" campaign is intended to change the behavior of wireless phone users. Campaign initiatives include a series of movie trailers that remind theater patrons to silence their wireless phones and an in-class novice driver program, provided free of charge to educators, created to teach teens about driver distractions.



**U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
SUBCOMMITTEE ON AVIATION**

**Cell Phones on Aircraft: Nuisance or Necessity?**

Statement for the Committee Hearing Record

Submitted by Airline Division, International Brotherhood of Teamsters

25 Louisiana Avenue NW, Washington, D.C. 20001, 202-624-8741

July 14, 2005

The International Brotherhood of Teamsters ("IBT") Airline Division, representing over 40,000 aviation employees, including flight attendants, pilots, aircraft maintenance technicians and customer service representatives, appreciates the opportunity to provide the following statement regarding in-flight cell phone use.

Both the Federal Communications Commission ("FCC") and the Federal Aviation Administration ("FAA") share jurisdiction over the use of cellular telephones and other transmitting portable electronic devices ("PEDs") aboard aircraft in flight. The FCC's jurisdiction, and that agency's prohibition of the use of PEDs aboard airborne aircraft, derives from the need to guard against the threat of harmful interference to terrestrial networks. The FAA has jurisdiction over aviation and flight safety, and has banned the use of PEDs in flight because of potential interference to an aircraft's aviation navigation and communications systems. The FCC recently issued a Notice of Proposed Rulemaking ("NPRM") that intends to eliminate that agency's ban on cell phones in flight. A unilateral lifting of the FCC ban could result in confusion for the traveling public. Such uncertainty could result in (increased) illicit cell phone use in flight, and confrontations between passengers and crew, with possible serious safety consequences. Accordingly, both the FAA and FCC should coordinate all rulemaking involving cellular phones and other PEDs.

The Aviation Subcommittee poses the question: Are cell phones on aircraft a necessity or a nuisance? Cell phones are not necessary, would be a nuisance in flight, and more importantly, they would create a threat to aviation safety. They might also create interference with terrestrial communications, thus jeopardizing safety on *terra firma*. The IBT has several concerns about permitting the use of cell phones and PEDs at this time.



In the NPRM, the FCC sought comments on “ways to ensure that this can be accomplished without creating the potential for harmful interference to terrestrial cellular networks.” The FCC’s role should not be to “seek comments on ways to ensure” but to mandate standards that do ensure that wireless technology use can be accomplished without creating interference to terrestrial cellular networks. Before the FCC even contemplates lifting or modifying the ban, the technology must be demonstrated and proved reliable, and safeguards must be in place to assure that these devices can be used in all circumstances on all aircraft without creating terrestrial interference. The FAA has the same obligation. It must assure that PEDs could be used without interfering with aircraft navigation and communications systems. To date such assurances cannot be made.

The RTCA, Inc., a private, non-profit entity that develops consensus recommendations regarding aviation issues and systems, is currently studying this matter, and expects to issue a report in 2006. (Note: the RTCA has previously issued 4 reports on this subject in 1963, 1988, 1996, and 2004; these documents have shaped current FAA policy.) Any change of policy prior to the issuance of the RTCA report would be premature. In their 2004 report, the RTCA acknowledged that most studies indicate transport-category aircraft systems are susceptible to electromagnetic interference. These findings are consistent with those reported by the National Aeronautics and Space Agency (2001) and the United Kingdom Civil Aviation Authority (2003). Additionally, there are numerous anecdotal reports submitted by crew members to the NASA Aviation Safety Reporting System (“ASRS”) that suggest illicit or accidental PED use caused navigational and communications problems in flight. Based on the available evidence, there are several technical issues that still need to be addressed before cellular phone or other PED use can safely be permitted on aircraft.

There are serious operational concerns with respect to cellular phone use beyond the technical concerns regarding potential interference with terrestrial and airborne communication and navigation systems. For example, it would be difficult for flight attendants to identify approved cellular devices and to monitor their use in flight. PED technology is not only rapidly evolving, but it also differs from country to country. It would be difficult for the FAA to keep up with these changes and differences (and issue the appropriate approvals), much less for flight attendants, who would have to scrutinize a broad array of devices and make judgments based on limited knowledge and information, to do so. This is a sure recipe for passenger and crew conflict. Further, the potential for disagreements between passengers annoyed by continuous cell phone use by one or more passengers in close proximity could compromise flight safety by increasing disruptive passenger incidents. Conflicts between passengers, and between passengers and flight attendants, are particularly troublesome post-9/11 and should be avoided at all costs. Not only are they dangerous and problematic of their own accord, these conflicts might be initiated deliberately to divert attention from a genuine terrorist threat to the aircraft. Finally, during in-flight emergencies and/or emergency evacuations, the use of cell phones could interfere with the ability of flight attendants to maintain control of the cabin and passengers, further endangering lives.

In the NPRM, the FCC stated that allowing the use of these devices "has the potential to benefit homeland security, business, and consumers" and "will benefit public safety and homeland security personnel in need of an air-to-ground communications link in case of an emergency situation." These arguments may have public appeal, but they lack substance. While lifting the ban might benefit business, this benefit would not necessarily accrue to consumers, particularly those consumers of air travel who might be subject to incessant cell phone chatter

from one end of the continent to the other, or even from one continent to another. More importantly, we reject the assumption that allowing the use of these devices would benefit homeland security. One might just as easily state that the use of these devices would benefit those who would seek to perpetrate terrorist acts. It would be difficult to obtain empirical evidence to support either claim. The existing ban on the use of these devices would not preclude their use by public safety or security personnel (or by passengers and crew, as demonstrated by the events of 9/11) in an emergency. Nor does the existing ban create a deterrent to terrorists, who would hardly refrain from using a cell phone simply because of a FCC or FAA ban. Neither lifting or maintaining the ban would likely benefit or adversely effect aviation security. Framing this issue in this manner only deflects attention from known safety concerns.

Once it can be empirically demonstrated that the use of wireless (other than cellular phone) technology does not interfere with either terrestrial communications and with aviation communication and navigation systems, the IBT Airline Division would support the conditional lifting of the ban on non-verbal PED (e.g. wireless internet access and text messaging) and the adaptation of technology to permit the limited and monitored use of these devices aboard aircraft in flight. All issues regarding technology, system security, system operation, system failure, and system maintenance, as well as procedures to be followed in the event of system failure in flight, must be addressed before PED use is permitted. Until such empirical data is available and can be replicated in scenarios that reflect all probable airborne flight conditions and parameters of use, as well as all types/models of devices, the current prohibitions should remain in place.

The IBT Airline Division appreciates the opportunity to comment on this issue.

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Overview of Public Comments on the Airline Cell Phone Ban*Airline Industry*

**United Airlines** does not intend to allow cell phone use on its aircraft even if the FCC and FAA lift their respective bans. United notes that 80 percent of its passengers would prefer wireless Internet access over cell phone availability.

**Northwest Airlines, Delta Air Lines, and JetBlue Airways** will not take a formal position on the cell phone ban until the RTCA concludes that new technology such as pico cells will prevent PED-related interference with avionics.

**American Airlines**, which tested a pico cell network developed by Qualcomm last year, would consider allowing voice and/or data service on its aircraft if the FCC and FAA conclude that pico cell and other new forms of communications technology are safe.

Similarly, **Southwest Airlines** would allow certain cell phone and/or wireless data transmissions, depending upon passenger preferences, if the FCC and FAA lifted their respective bans on airline cell phone use.

*Aircraft and Avionics Manufacturers*

**Boeing** wants the FCC to approve the use of pico cells onboard aircraft, and maintains that market forces should be relied on to ensure compatibility of pico cell systems with passengers' wireless equipment.

**Honeywell** maintains that more research on pico cell technology is necessary before the FAA or FCC lift their bans on cell phone and PED use on aircraft.

*Flight Attendants*

The **Association of Flight Attendants (AFA)** wants to maintain the airline cell phone ban. AFA maintains that cell phone conversation onboard aircraft will further increase passenger stress levels and the potential for air rage among passengers. The AFA contends that dividing the cabin into zones where passengers could opt for seating in a cell phone-permitted zone would not be effective.

*Pilots*

The **Air Line Pilots Association (ALPA)** does not plan to take a formal position on the cell phone ban until the RTCA completes its latest study on PED-related interference in late-2006.

Some individual pilots filed comments at the FCC expressing concern that noise from large numbers of passengers talking on cell phones could distract the flight crew.

***Individual Air Passengers and Passenger Organizations***

According to a recent poll conducted by IDC Corp., a Massachusetts-based research firm, only 11 percent of 50,000 respondents supported lifting the ban on airline cell phone use.

A recent poll of 702 air travelers conducted by Lauer Research for the Association of Flight Attendants (AFA) and the National Consumers League found that 63 percent of respondents opposed lifting the airline cell phone ban.

Earlier this year, a USA Today/CNN/Gallup poll found that nearly 70 percent of frequent or occasional air passengers want the airline cell phone ban lifted.

***Cell Phone and Electronics Industries***

The **Cellular Telecommunications & Internet Association (CTIA)**, which represents the major cell phone providers, supports maintaining the existing bans on aircraft cell phone and PED use, citing potential interference with their ground-based cellular networks. The CTIA urged the FCC to obtain more information on the effect of pico cell networks on their members' ground-based cellular networks.

**Cingular Wireless**, the nation's largest mobile phone provider, and **Verizon Wireless** indicated they might be willing to support lifting the ban if safeguards existed to protect their ground-based networks from interference. If the aircraft cell phone ban was lifted, Cingular would encourage air passengers to use discreet services, such as text messaging and e-mail, as opposed to voice communications.

The **Consumer Electronics Association** prefers that voice communications be prohibited, but data applications be allowed.